

Service Manual

IC Recorder

Model No. **RR-US551PP**
RR-US551E
RR-US551EE

Product Color: (W)...White Type



RR-US551

WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

IMPORTANT SAFETY NOTICE

There are special components used in this equipment which are important for safety. These parts are marked by  in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

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1 Safety Precautions

1.1. General Guidelines

1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
3. After servicing, carry out the following leakage current checks to prevent the customer from being exposed to shock hazards.

1.2. Safety Part Information

Safety Parts List:

There are special components used in this equipment which are important for safety.

These parts are marked by ⚠ in the Schematic Diagrams, Exploded View & Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

Table 1

Safety	Ref. No.	Part No.	Part Name & Description	Remarks
⚠	13	RKS0466G-W	REAR CABINET	PP
⚠	13	RKS0466H-W	REAR CABINET	E/EE
⚠	ICP501	D4FB1R100015	RESETTABLE FUSE (SMT TYPE)	
⚠	ICP502	D4FB1R100015	RESETTABLE FUSE (SMT TYPE)	
⚠	A3	VQT2M17	O/I BOOK (En/Ct)	PP
⚠	A3	VQT2M18	O/I BOOK (En)	E
⚠	A3	VQT2M19	O/I BOOK (Ge/It/Fr/Du/Sp/Cn)	E
⚠	A3	VQT2Q61	O/I BOOK (Sw/Da/Cz/Po/Pr/Ar)	E
⚠	A3	VQT2Q63	O/I BOOK (Ru/Ur)	EE

2 Warning

2.1. Prevention of Electro Static Discharge (ESD) to Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor “chip” components. The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminium foil, to prevent electrostatic charge build up or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder remover device. Some solder removal devices not classified as “anti-static (ESD protected)” can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminium foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

Caution:

Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

2.2. Service caution based on Legal restrictions

2.2.1. General description about Lead Free Solder (PbF)

The lead free solder has been used in the mounting process of all electrical components on the printed circuit boards used for this equipment in considering the globally environmental conservation.

The normal solder is the alloy of tin (Sn) and lead (Pb). On the other hand, the lead free solder is the alloy mainly consists of tin (Sn), silver (Ag) and Copper (Cu), and the melting point of the lead free solder is higher approx.30 degrees C (86°F) more than that of the normal solder.

Definition of PCB Lead Free Solder being used

The letter of "PbF" is printed either foil side or components side on the PCB using the lead free solder. (See right figure)

PbF

Service caution for repair work using Lead Free Solder (PbF)

- The lead free solder has to be used when repairing the equipment for which the lead free solder is used.
(Definition: The letter of "PbF" is printed on the PCB using the lead free solder.)
- To put lead free solder, it should be well molten and mixed with the original lead free solder.
- Remove the remaining lead free solder on the PCB cleanly for soldering of the new IC.
- Since the melting point of the lead free solder is higher than that of the normal lead solder, it takes the longer time to melt the lead free solder.
- Use the soldering iron (more than 70W) equipped with the temperature control after setting the temperature at 350±30 degrees C (662±86°F).

Recommended Lead Free Solder (Service Parts Route.)

- The following 3 types of lead free solder are available through the service parts route.
RFKZ03D01K----- (0.3mm 100g Reel)
RFKZ06D01K----- (0.6mm 100g Reel)
RFKZ10D01K----- (1.0mm 100g Reel)

Note

- * Ingredient: Tin (Sn), 96.5%, Silver (Ag) 3.0%, Copper (Cu) 0.5%, Cobalt (Co) / Germanium (Ge) 0.1 to 0.3%

3 Service Navigation

3.1. Service Information

This service manual contains technical information which will allow service personnel's to understand and service this model. If the circuit is changed or modified, this information will be followed by supplement service manual to be filled with original service manual.

3.2. Service Hint

3.2.1. USB Serial Number

Serial Number is required to obtain the Firmware Updates.

3.2.2. Firmware Version

To obtain updated Firmware version and procedures for updating, please refer to item 6.2.

4 Specifications

■ Power	
Batteries	DC 3.0 V (2 AAA LR03 batteries)

■ Audio	
Sampling Frequency (Stereo/Monaural)	XP: 44.1 kHz/44.1 kHz LP: 22.05 kHz/16 kHz SLP: 8 kHz/8 kHz
Recording Format	MP3
Playable Bit Rate (MUSIC, A,B,C,D Folder)	8 kbps to 320 kbps
Playable Sampling Frequency (MUSIC Folder)	8 kHz to 48 kHz
Frequency Response (-10 dB, Rec-Play, Monaural)	XP: 180 Hz to 15,100 Hz LP: 180 Hz to 6,700 Hz SLP: 180 Hz to 2,900 Hz
Built-in Microphone S/N Ratio	40.5 dB (XP) Filter (JIS A)

■ USB	USB2.0 (Hi-Speed) DC 5V / 150 mA
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■ Audio Output	
Earphone	ø 3.5 mm (1.8"), 16 Ω, Max: 3 mW
Speaker output	ø 20 mm (25/32"), 8 Ω, Max: 330 mW

■ Audio Input	
External Microphone	ø 3.5 mm (1/8"), 0.80 mV plug in power
Built-in Memory	1 GB*1
Operating Temperature	0°C to 40°C (32°F to 104°F)
Operating Humidity	20% to 80% (non-condensing)

*1 GB means one billion bytes. Usable capacity will be less.

■ Battery life (may be less depending on the operating conditions.)

Battery (AAA LR03)	Recording mode		Rec*3	Play*4
Alkaline battery*2	Stereo	XP	approx. 23 h.	approx. 35 h.
		LP	approx. 29 h.	approx. 35 h.
		SLP	approx. 32 h.	approx. 35 h.
	Monaural	XP	approx. 32 h.	approx. 35 h.
		LP	approx. 42 h.	approx. 35 h.
		SLP	approx. 45 h.	approx. 35 h.

*2 Using Panasonic Alkaline battery.

*3 When zoom microphone is off.

*4 When audio is output from speaker (Volume: 13, EQ: off, playback speed control: 100%).

■ Standard recordable time

Recording mode		Time	Bit rate
Stereo	XP	16 h.30 min.	128 kbps
	LP	33 h.10 min.	64 kbps
	SLP	133 h.10 min.	16 kbps
Monaural	XP	33 h.10 min.	64 kbps
	LP	66 h.30 min.	32 kbps
	SLP	266 h.30 min.	8 kbps

■ Dimensions

Max. Dimensions (WxHxD)	40.4 mm x 110.6 mm x 16.8 mm (1-19/32" x 4-11/32" x 21/32")
Cabinet Dimensions (WxHxD)	39 mm x 110.6 mm x 15.1 mm (1-17/32" x 4-11/32" x 19/32")

■ Mass (Weight)	Approx. 65 g (2.30 oz.) with battery Approx. 43 g (1.52 oz.) without battery
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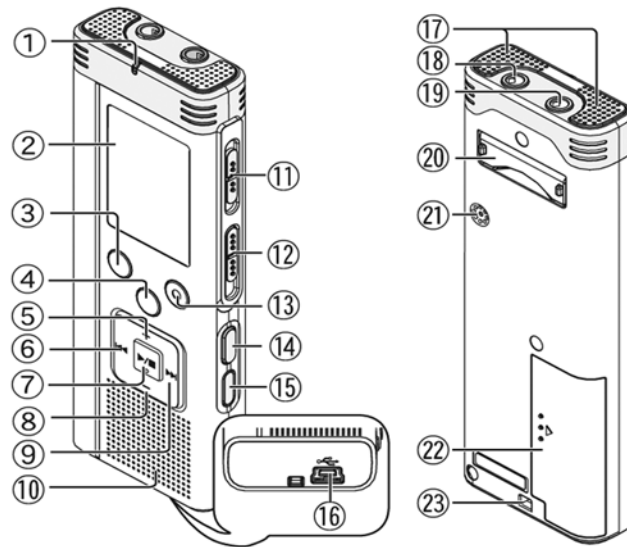
Specifications are subject to change without notice.

■ System requirement

Computer	IBM PC/AT compatible machines
OS	● Windows® 2000 Professional SP4 ● Windows® XP Home Edition/Professional and SP2, SP3 ● Windows Vista® Home Basic/Home Premium/Business/Ultimate and SP1 ● Windows® 7 Starter/Home Basic/Home Premium/Professional/Ultimate
Interface	USB port (Operation cannot be guaranteed if you use a USB hub or extension cable.)

5 Location of Controls and Components

5.1. Components of IC Recorder



- ① Recording indicator (red)
- ② LCD display
- ③ FOLDER/SPEED
- ④ STOP
- ⑤ + (Volume)
- ⑥ ◀◀ (Fast backward)
- ⑦ ▶/■ (Play/Stop/Enter)
- ⑧ - (Volume)
- ⑨ ▶▶ (Fast forward)
- ⑩ Built-in speaker
- ⑪ OPR/HOLD
- ⑫ Recording position switch (ZOOM/WIDE/MANUAL)
- ⑬ REC/PAUSE
- ⑭ •A-B (A-B repeat/Repeat)/-MENU
- ⑮ ERASE

- ⑯ USB jack
- ⑰ Built-in microphone
- ⑱ External microphone jack (MIC)
- ⑲ Headphone/earphone jack (◻)
- ⑳ Stand

When you perform zoom recording with the unit placed on a surface, stable zoom effect can be obtained by using the stand.

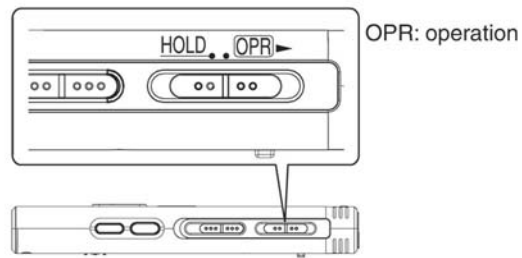


- ㉑ Zoom microphone
- ㉒ Battery cover
- ㉓ Hand strap hole

5.2. Basic Operation

Turning ON/OFF the Power

OPERATION/HOLD Switch



Turning the power ON

- Slide OPERATION/HOLD switch to **OPR** side, then the power turns on and the display lights on.

Turning the power OFF

- Slide and hold OPERATION/HOLD switch to **OPR** side for 2 seconds.

Also, when you do not operate the unit for more than approx. 15 minutes while the unit is stopped, "b4E" is displayed and the power automatically turns off.

6 Self-diagnostic/Doctor Mode

6.1. Service Functions

6.1.1. Test Mode

Purpose: To enter into Test Mode for checking and inspection of unit.

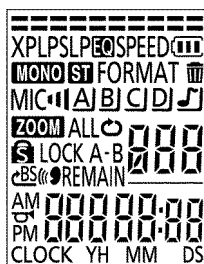
Procedures:

1. Set the recording position switch to "MANUAL" at the power off.
(Setting to "MANUAL" after turning on the power is OK.)
2. Slide [OPR/HOLD] switch to "OPR" side to turn on the power.
3. Set to "HOLD" mode by pushing [OPR/HOLD] button.
4. Input the below keys while displaying the "HOLD".

[MENU] --> [ERASE] --> [◀◀] --> [VOL-]

Note : Input of these keys are done within two seconds while displaying "HOLD".

5. All segments of LCD will Light up & the unit will enter into the Operation Check Mode. During the Operation Check Mode, the Recording LED will be blinking.



Initial display in the
Test Mode

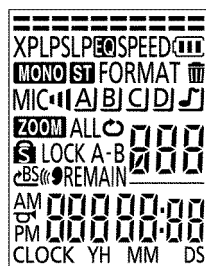
6. Remove the batteries to end this mode.

6.1.2. USB Serial Number (ID) Confirmation Function

Purpose: To check USB Serial Number (ID) which is written in the NAND flash memory at the final process is confirmed in this mode.

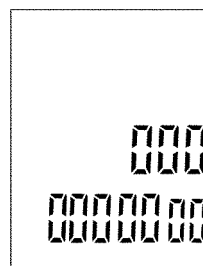
Procedures:

1. Enter into Test Mode, check all segments of LCD light up.
2. Press and hold [▶/■] for 10 seconds and the USB serial number which is written in NAND flash memory is displayed.



Initial display
(Test Mode)

Press and hold [▶/■]
for 10 seconds



USB serial number (ID)
confirmation display

3. Remove the batteries to end this mode.

6.1.3. Reset Function

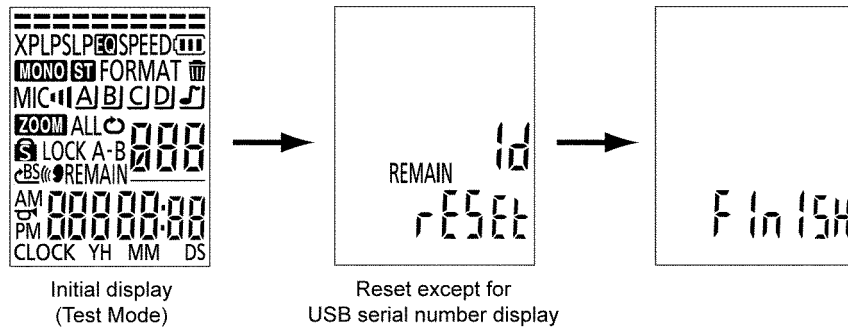
Purpose:

- To reset to factory default setting.
- Only USB Serial Number (ID) is not initialized, and NAND flash memory is not formatted logically in this mode.

Procedures:

1. Enter into Test Mode, check all segments of LCD light up.
2. Set the Recording position switch to "WIDE".

- Press and hold [▶/■] for 10 seconds and the unit will be reset.



Caution:

If the password is set, the password will be initialized.
Recording files and data files other than mp3 are erased.

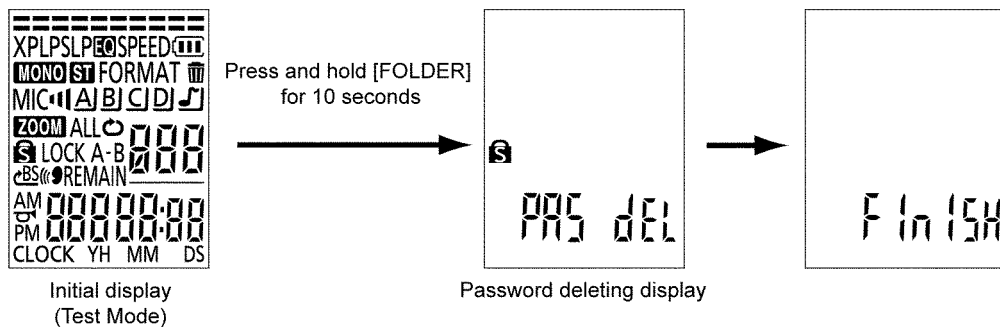
- Remove the batteries to end this mode.

6.1.4. Password Deletion Function

Purpose: To retain the data of all folders only deleting the password when forgotten the password.

Procedures:

- Enter into Test Mode, check all segments of LCD light up.
- Press and hold [FOLDER] for 10 seconds and the password is automatically deleted.



Caution:

Pressing the [FOLDER] for 10 seconds is invalid when the password is unset (because of no need to delete the password).

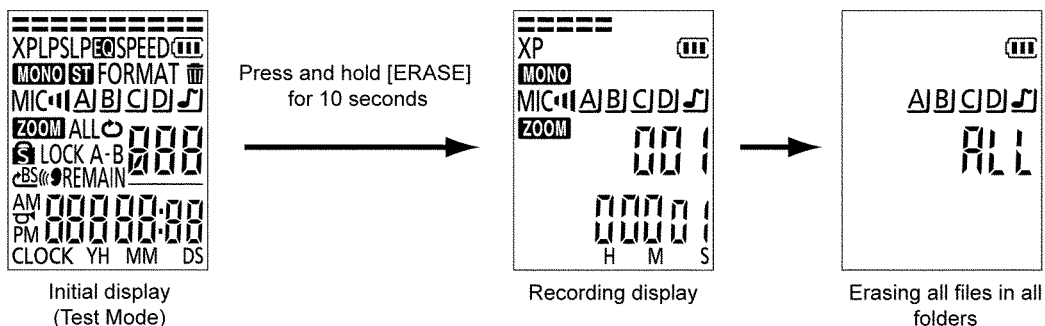
- Remove the batteries to end this mode.

6.1.5. Repeat Recording Function

Purpose: To measure recording battery life.

Procedures:

- Enter into Test Mode, check all segments of LCD light up.
- Press and hold [ERASE] for 10 seconds and the unit will enter into the repeat recording mode.



Caution:

Recording mode, stereo/monaural and zoom setting are retained the final one before entering this mode. Therefore, cannot set them in the repeat recording function.

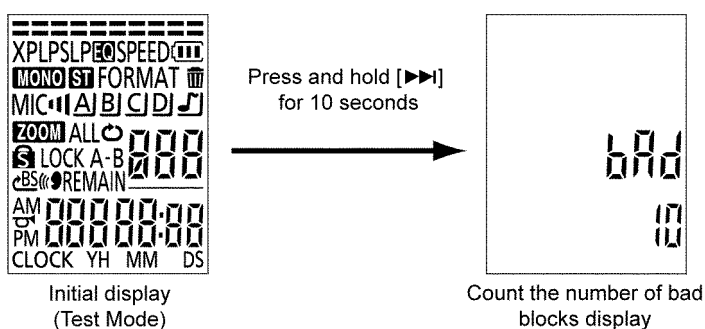
- Remove the batteries to end this mode.

6.1.6. Bad Blocks in the NAND Flash Memory Function

Purpose: To count the number of bad blocks in the NAND flash memory in order to evaluate the flash memory.

Procedures:

1. Enter into Test Mode, check all segments of LCD light up.
2. Press and hold [▶▶] for 10 seconds and the unit will enter into the bad blocks counting mode.



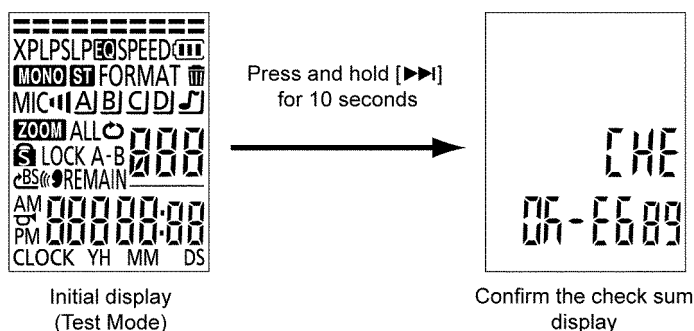
3. Remove the batteries to end this mode.

6.1.7. Checksum in the Firmware Function

Purpose: To confirm the checksum in the Firmware stored area in the NAND flash memory in order to judge whether the data of the Firmware area is normal or not.

Procedures:

1. Enter into Test Mode, check all segments of LCD light up.
2. Set the Recording position switch to "WIDE".
3. Press and hold [▶▶] for 10 seconds and the unit will enter into the checksum mode.



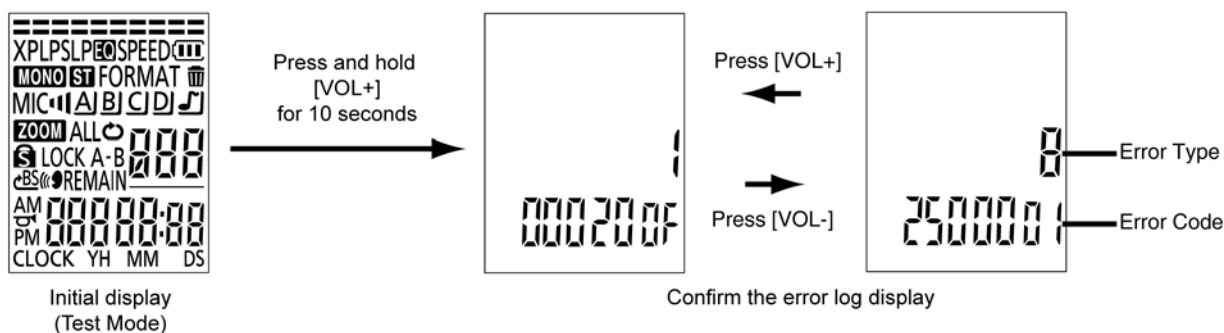
6.1.8. Check and Confirms The Error Log Function

Purpose: To confirm the error log in order to become more efficient the error analysis.

Procedures:

1. Enter into the Test Mode, check all segments of LCD light up.
2. Press and hold the [VOL+] for 10 seconds and the unit will enter into the error log mode.
3. Press [VOL+] and [VOL-] to check the error code history.

Upper of 7-segment : Display the error type number, [1] , [8] and [C]
Lower of 7-segment : Display the error code.



4. Remove the batteries to end this mode.

Caution:

Triple beeps when pressed [VOL+] / [VOL-] at the beginning/end of the error code history.

Error Code :

There are three types of the error

1 : Normal Log Error, 8 : Physical Error, C : Logical Error

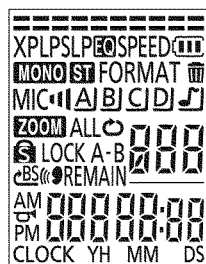
Error Code	Error Content	Display (Upper 7-segment)	Display (Lower 7-segment)
0x10001000	F/W start of update	1	0001000
0x10001001	F/W update success	1	0001001
0x1000100F	F/W failure of update	1	000100F
0x10002000	F/W start of recovery	1	0002000
0x10002001	F/W recovery success	1	0002001
0x1000200F	F/W failure of recovery	1	000200F
0x10003000	IPL2 start of recovery	1	0003000
0x10003001	IPL2 recovery success	1	0003001
0x1000300F	IPL2 failure of recovery	1	000300F
0x81100001	IPL2 summation check error	8	1100001
0x81100002	F/W 1 surface summation check error	8	1100002
0x81700001	PLST : Folder creation error	8	1700001
0xC1700002	PLST : Memory acquisition error	C	1700002
0x81700003	PLST : NAND READ error	8	1700003
0x81700004	PLST : NAND WRITE error	8	1700004
0x84100001	FAT error	8	4100001
0x82500001	NAND task: READ error	8	2500001
0x82500002	NAND task: WRITE error	8	2500002
0x82200000	REC MD: Application buffer error (nfmem_CheckFullAplBuf)	8	2200001
0x82200002	REC MD: Application WRITE buffer error (nfmem_WriteAplBuf)	8	2200002
0x82200003	REC MD: Encoding data timeout	8	2200003
0xC2200001	REC MD: Mailbox error	C	2200001
0xC2200002	REC MD: Memory acquisition error	C	2200002
0xC2100001	AUD MD: Mailbox error	C	2100001
0xC2100002	AUD MD: Memory acquisition error	C	2100002

6.1.9. Makes The Error Log File Function

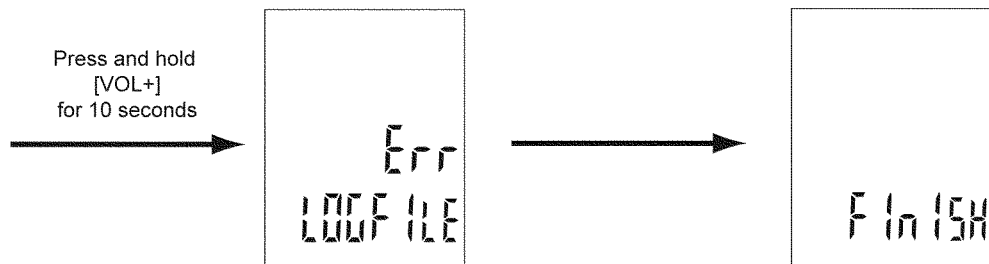
Purpose: To make the error log file in order to become more efficient the error analysis.

Procedures:

1. Enter the Test Mode, check all segments of LCD light up.
2. Set the Recording position switch to "WIDE".
3. Press and hold the [VOL+] for 10 seconds and the unit will enter into the make error log file mode.



Initial display
(Test Mode)



Confirm the error log display

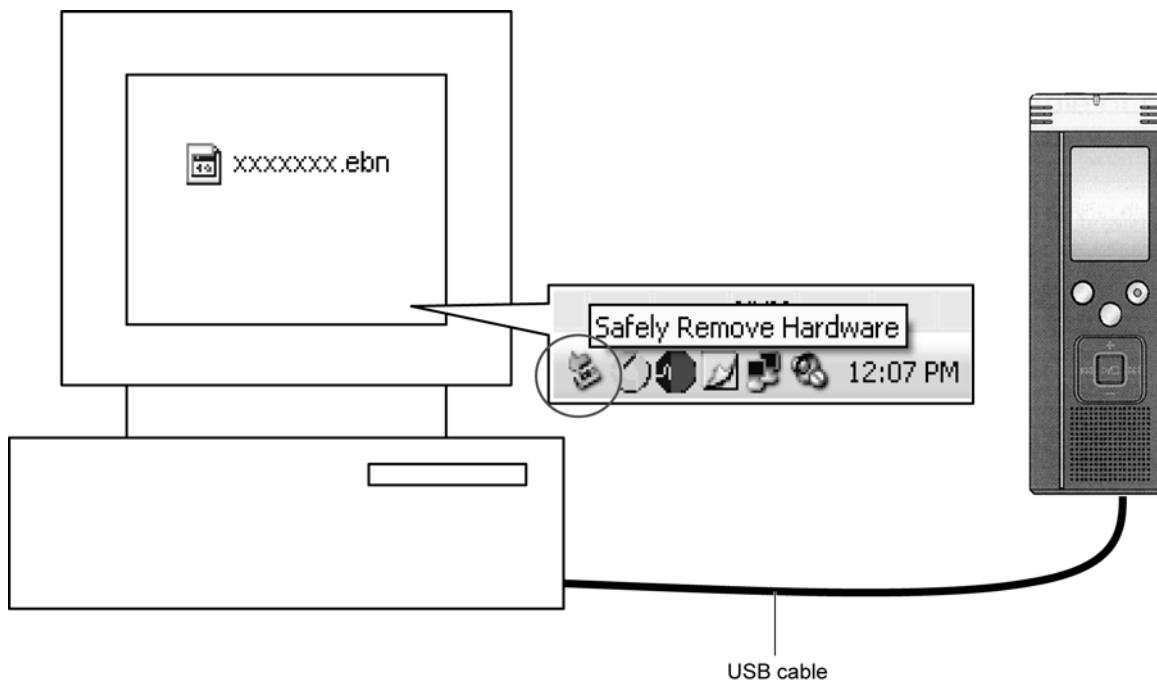
Caution:

Any keys are no efficient while in this mode.

4. "ErrorLog.dat" is made in the root folder of the unit.
5. Remove the batteries to end this mode.

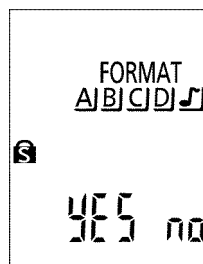
6.2. Firmware Update

6.2.1. Update Firmware and check its Version Number



• Updating the firmware

1. Insert battery with sufficient battery charge.
2. Connect IC-recorder to PC using USB cable.
3. Copy "XXXXXXX.ebn" file to IC-recorder root folder.
4. Terminate PC to IC-recorder connection safely
(refer to icon at bottom right side of the monitor – "Unplug, Eject or Safely Remove Hardware").
5. Let IC-recorder perform system update, "UP" and "[F] ACCESS" will display on LCD.
6. Upon completing update, perform "FORMAT" function to erase all files in the IC-recorder.
 - Press ERASE key
 - Select the display which [FORMAT] is flashing in file erasing mode
 - Select [YES] in the [YES no] display
 - Press [▶/■]



• Checking Firmware Version

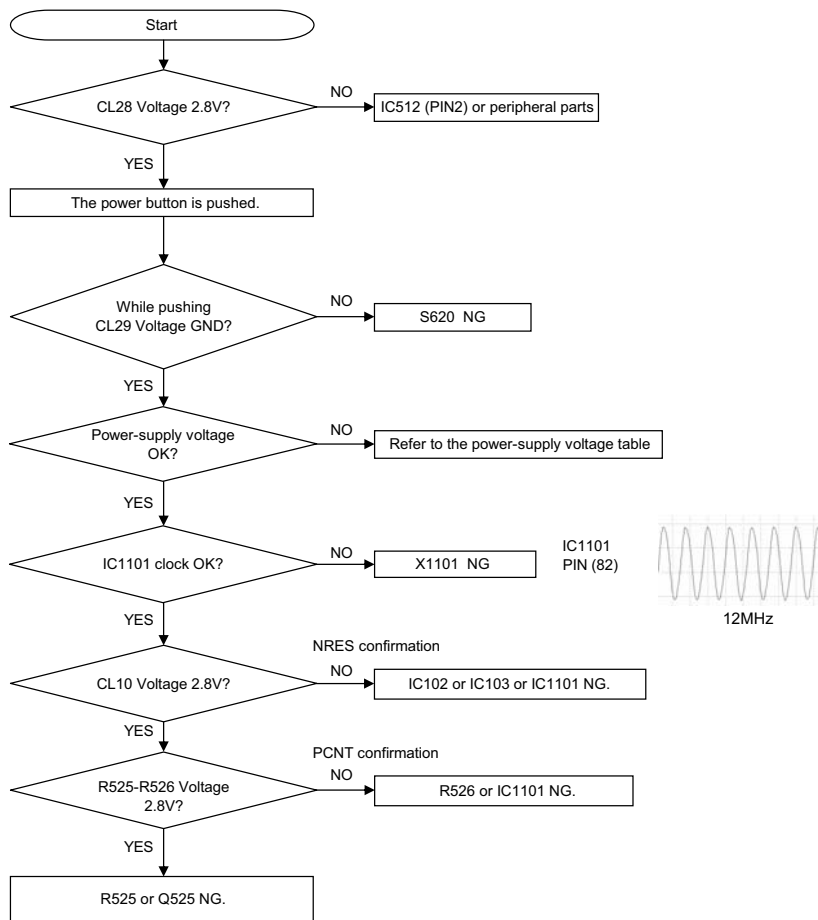
1. Press and hold [STOP] key for 10 seconds, LCD will display the firmware number.

Note: Firmware file and Firmware Version Number, please kindly obtain from TSN website.

7 Troubleshooting Guide

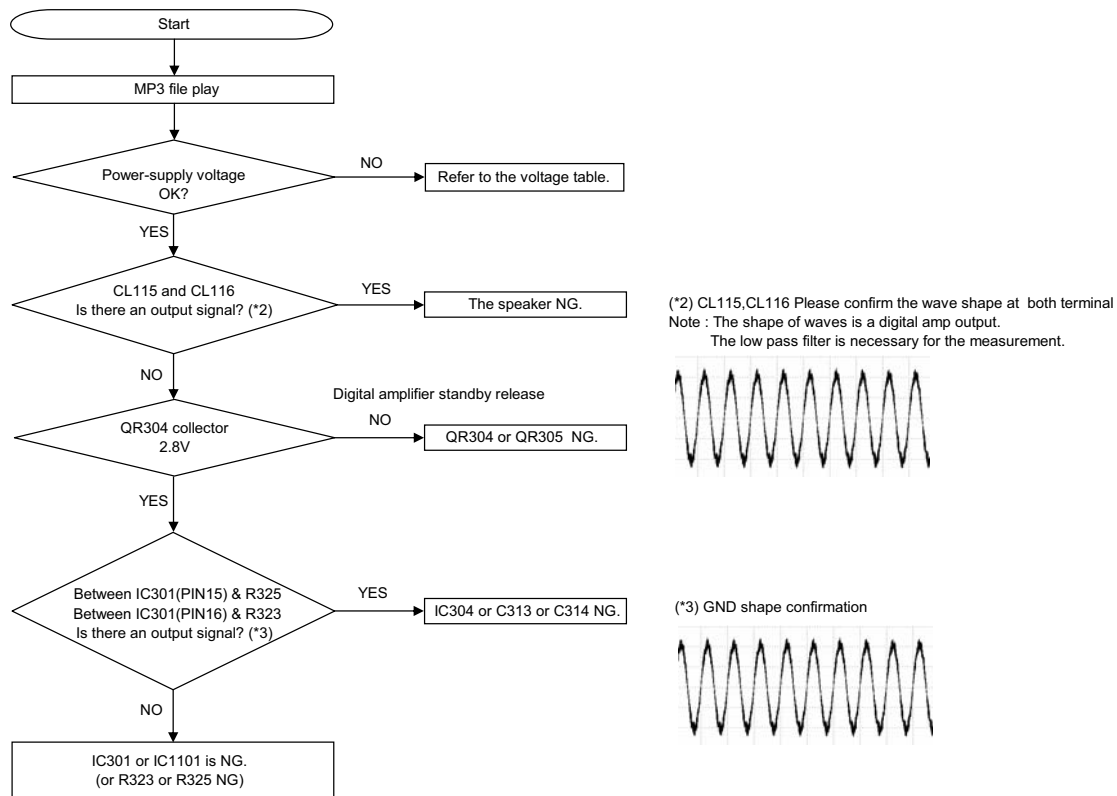
7.1. System start circuit confirmation

System doesn't start even if the power button pushes.

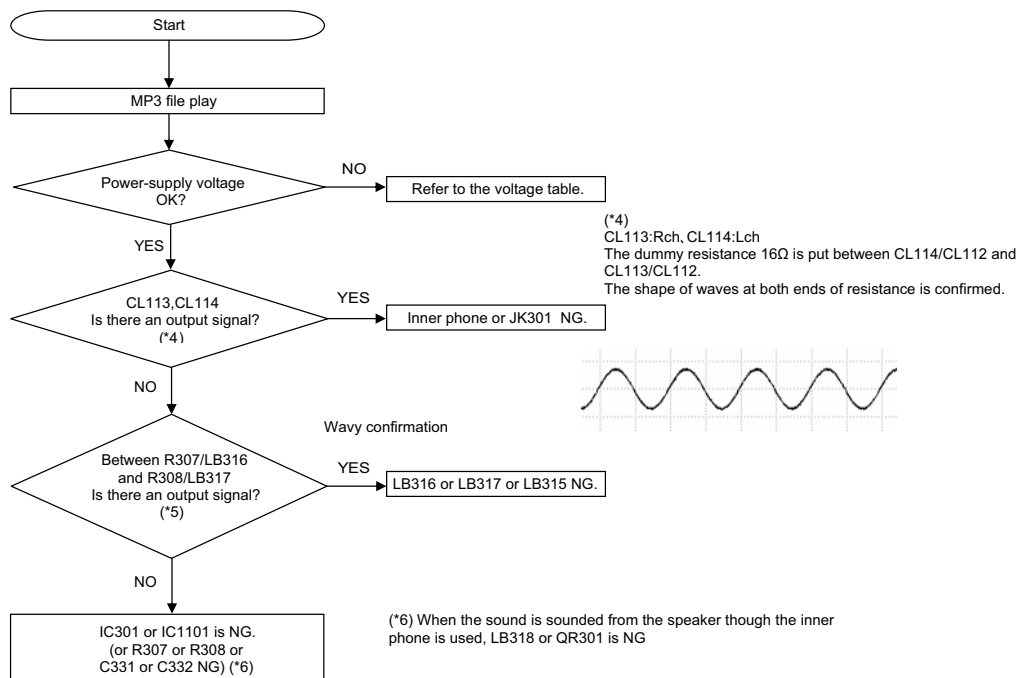


Power-supply voltage table	Measurement point	Power OFF	Record mode	Play mode	USB communicate mode	The main faulty point
Main source of electrical power	CL28	2.8V	2.8V	2.8V	3.2V	IC504
USB power supply	CL26	0V	0V	0V	3.2V	IC503 / IC502
Microcomputer power supply 1	C531	0V	1.2V	1.2V	1.5V	IC508 / IC509 / D502 / D503 / QR522 / QR526 / Q524
Microcomputer power supply 2	CL28	0V	2.8V	2.8V	3.2V	Q520 / QR522 / QR526
Power supply for recording	C473	0V	2.5V	0V	0V	IC405
Zoom stereo power supply	QR470 (collector)	0V	2.5V(At the zoom stereo)	0V	0V	QR470
Stereo power supply	QR471 (collector)	0V	2.5V(At the stereo)	0V	0V	QR471
Speaker amplifier power supply	C312	0V	2.8V - 2.4V	2.8V - 2.4V	3.2V - 2.8V	LB300
Flash memory power supply	C701	0V	2.8V	2.8V	3.2V	LB701

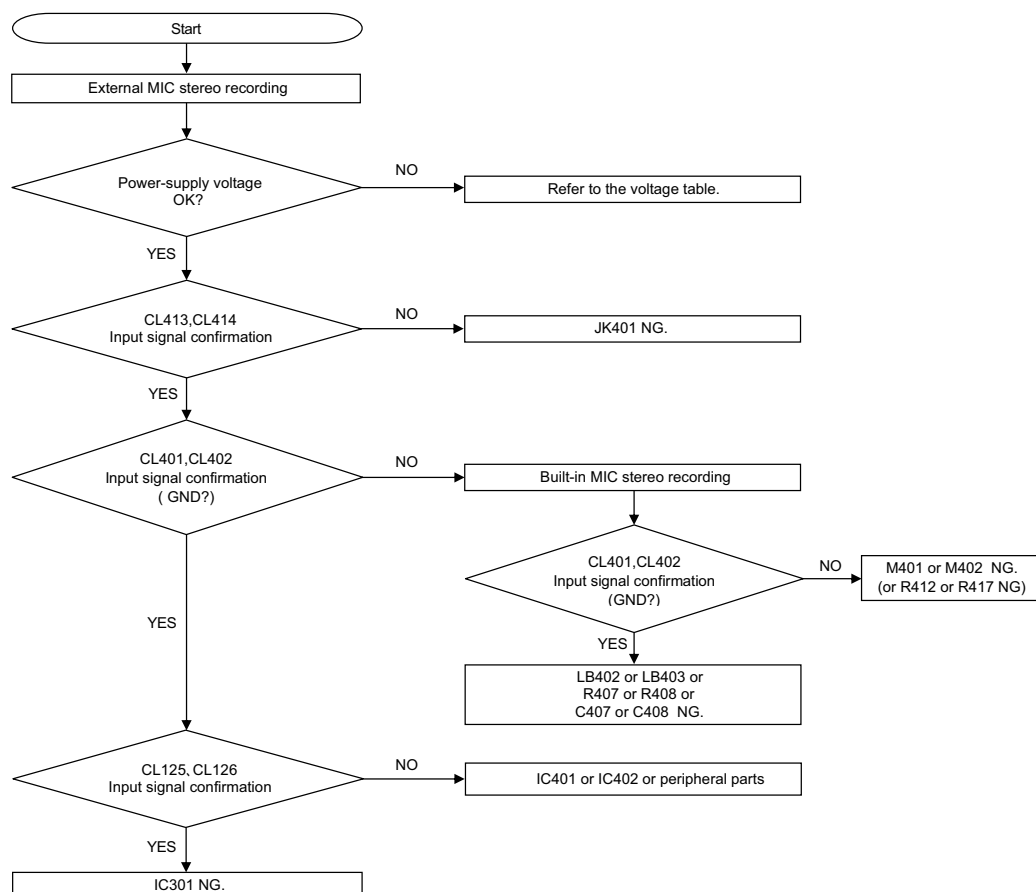
7.2. Speaker output circuit confirmation



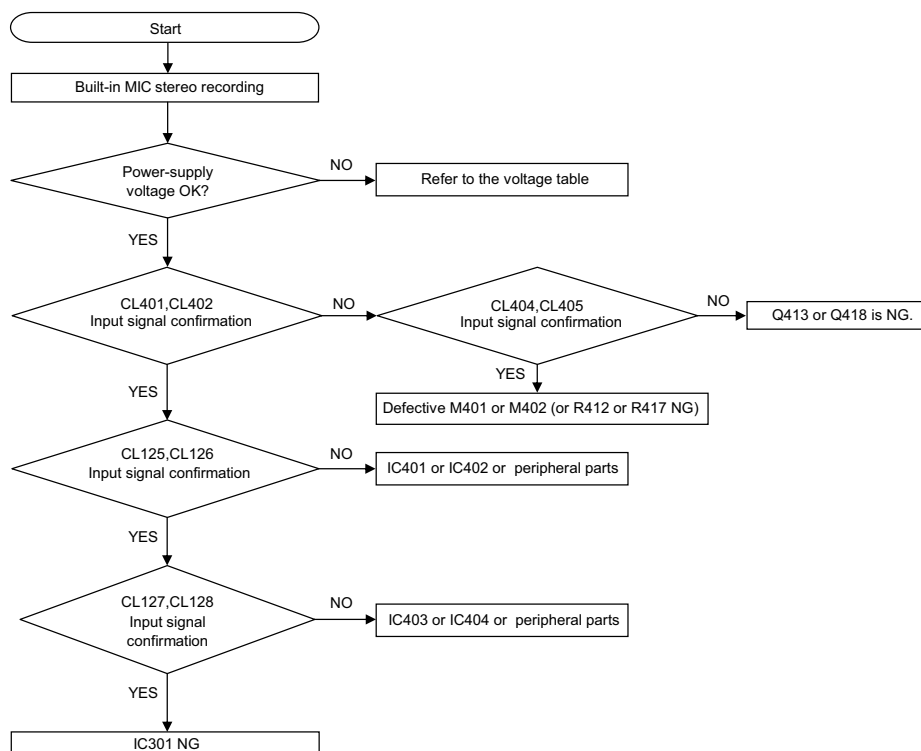
7.3. Earphone output circuit confirmation



7.4. External MIC recording circuit confirmation



7.5. Built-in MIC recording circuit confirmation



8 Disassembly and Assembly Instructions

Caution Note:

- This section describes the disassembly and/or assembly procedures for all major printed circuit boards & main components for the unit. (You may refer to the section of “Main components and P.C.B Locations” as described in the service manual)
- Before carrying out the disassembly process, please ensure all the safety precautions & procedures are followed.
- During the disassembly and/or assembly process, please handle with care as there may be chassis components with sharp edges.
- During disassembly and assembly, please ensure proper service tools, equipments or jigs is being used.
- During replacement of component parts, please refer to the section of “Replacement Parts List” as described in the service manual.
- Select items from the following indexes when disassembly or replacement are required.
 - Disassembly of MIC Ornament and LED Tip
 - Disassembly of Rear Cabinet Assembly
 - Disassembly of Stand and Battery Cover
 - Replacement of Side Ornament, Mode Knob and Hold Knob
 - Replacement of Main P.C.B.
 - Disassembly of LCD P.C.B.
 - Disassembly of Rec Button
 - Disassembly of Up Down Button Unit and Play Button
 - Disassembly of Menu Button
 - Disassembly of Speaker Unit
 - Replacement of Front Ornament
 - Disassembly of LCD Holder Unit

CAUTION NOTE:

Please use original screw and at correct locations.

Below shown is part no. of different screw types used:

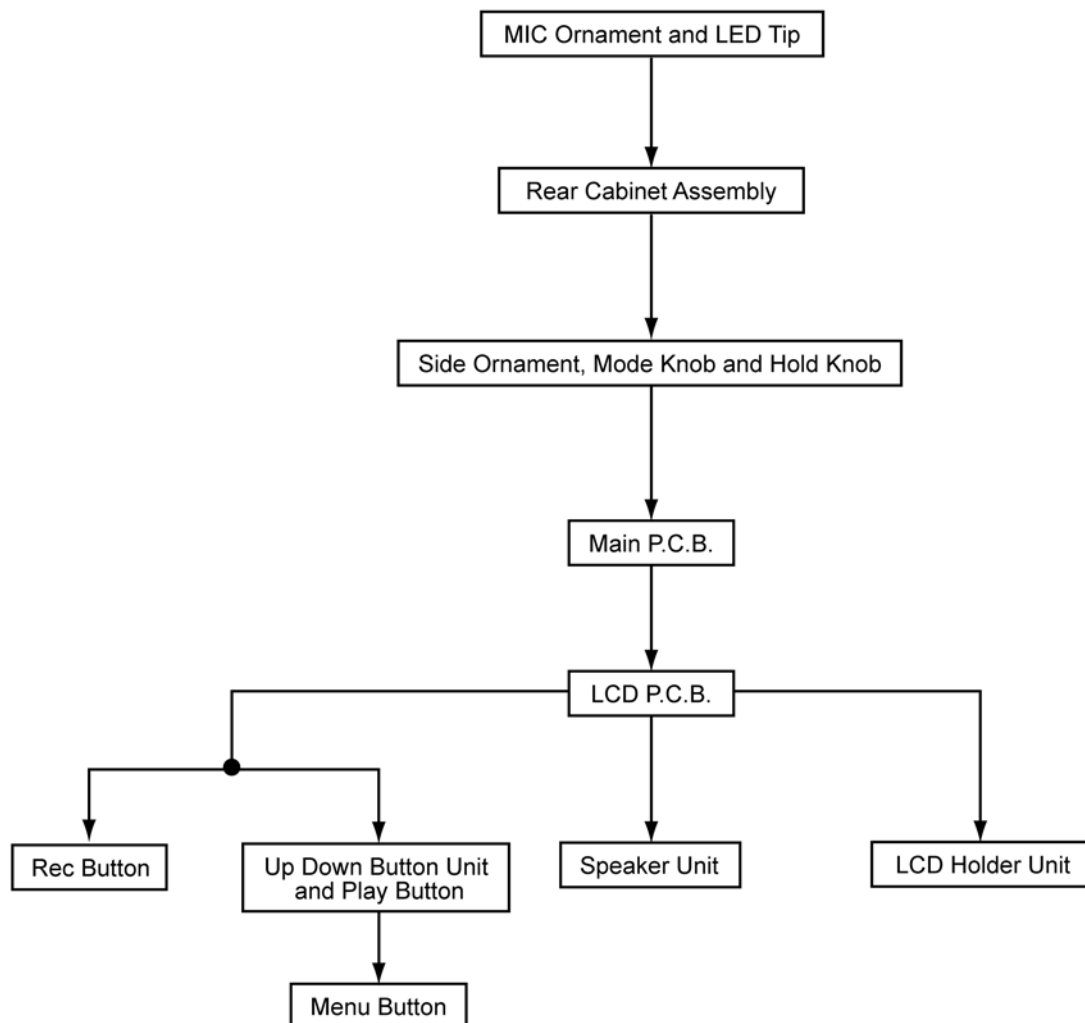
a : RHQ0051-K1

b : RHE5162ZB

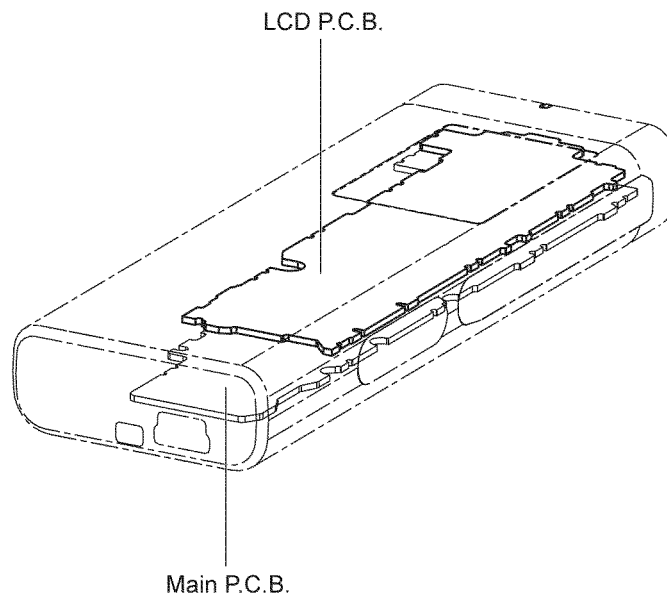
8.1. Disassembly flow chart

The following chart is the procedure for disassembling the casing and inside parts for internal inspection when carrying out the servicing.

To assemble the unit, reverse the steps shown in the chart below.



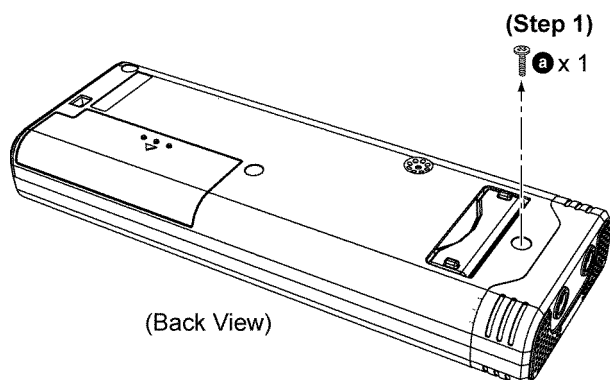
8.2. Main Parts Location Diagram



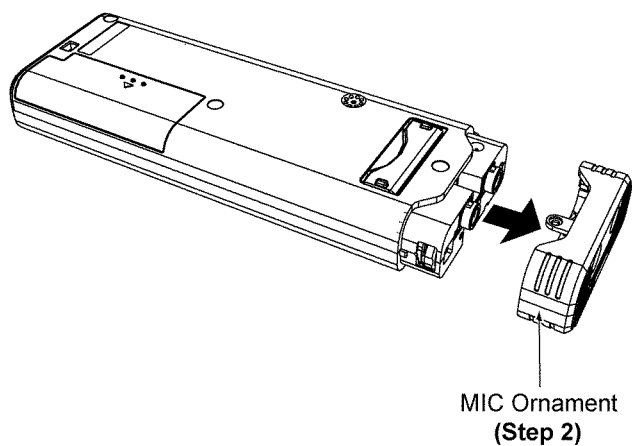
8.3. Disassembly of MIC Ornament and LED TIP

8.3.1. Disassembly of MIC Ornament

Step 1 : Remove 1 screw.



Step 2 : Remove MIC Ornament.

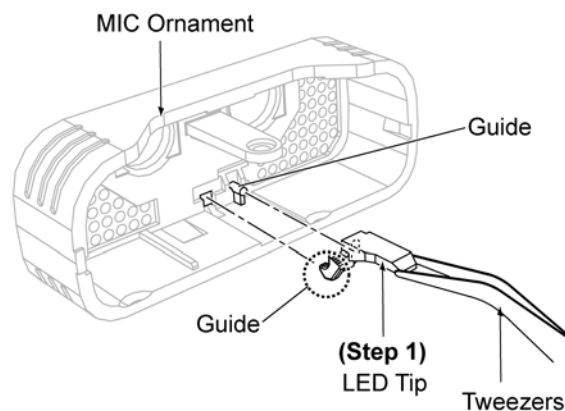


8.3.2. Disassembly of LED Tip

Refer to "Disassembly of MIC Ornament"

Step 1 : Use a Tweezers to remove the LED Tip.

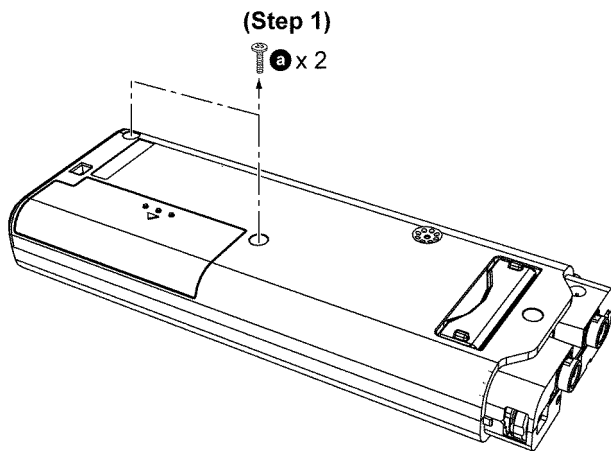
Caution : Ensure the LED Tip is fixed exactly onto the guides during assembly.



8.4. Disassembly of Rear Cabinet Assembly

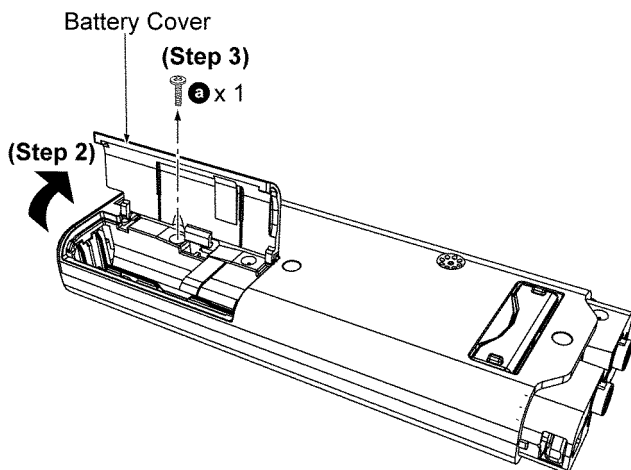
- Follow the (Step 1) - (Step 2) of item 8.3.1.

Step 1 : Remove 2 screws.

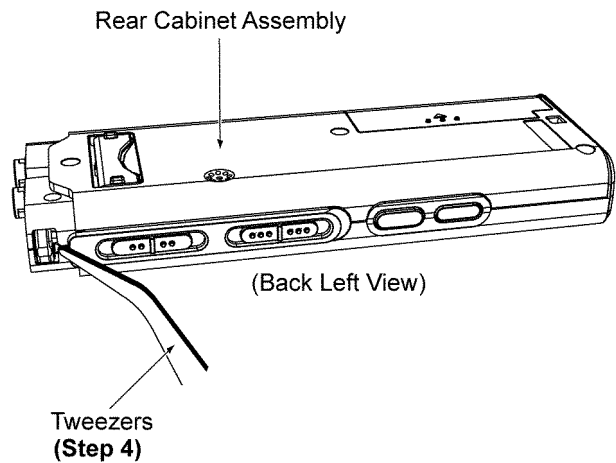


Step 2 : Flip open the Battery Cover.

Step 3 : Remove 1 screw.

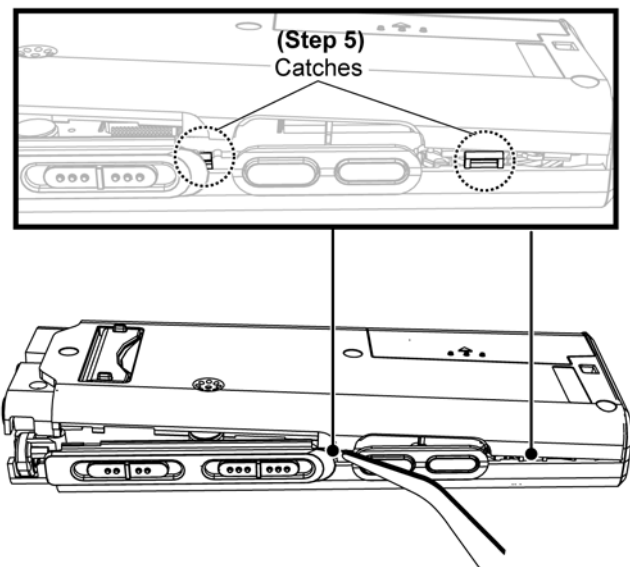


Step 4 : Insert a Tweezers at the upper portion of the Rear Cabinet Assembly to make a gap.

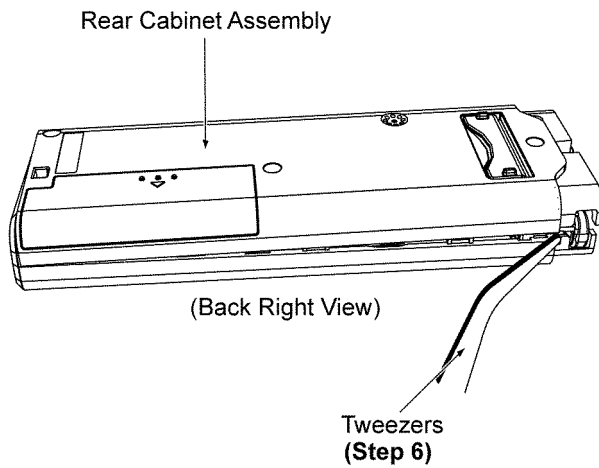


Step 5 : Gently push up the Rear Cabinet Assembly to release the 2 catches, one at a time.

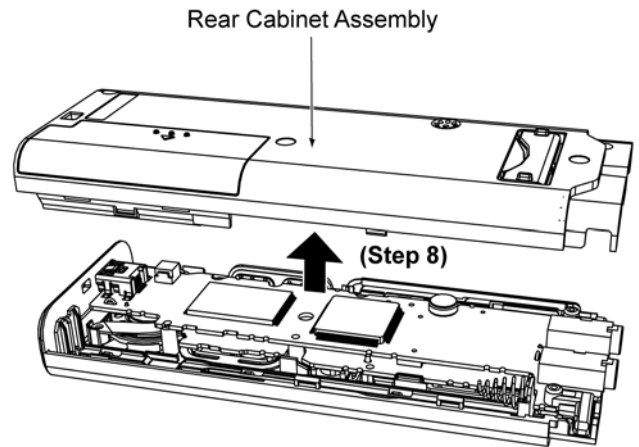
Caution : Do not apply strong force in releasing the catches to avoid damage of the catches.



Step 6 : Insert a Tweezers at the upper portion of the Rear Cabinet Assembly to make a gap.

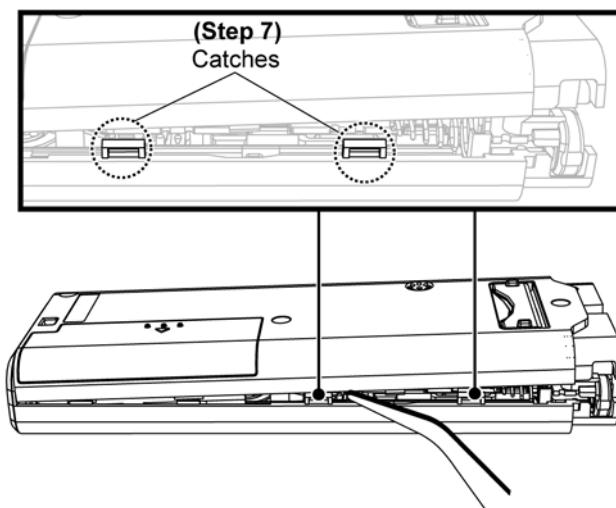


Step 8 : Remove the Rear Cabinet Assembly.



Step 7 : Gently push up the Rear Cabinet Assembly to release the 2 catches, one at a time.

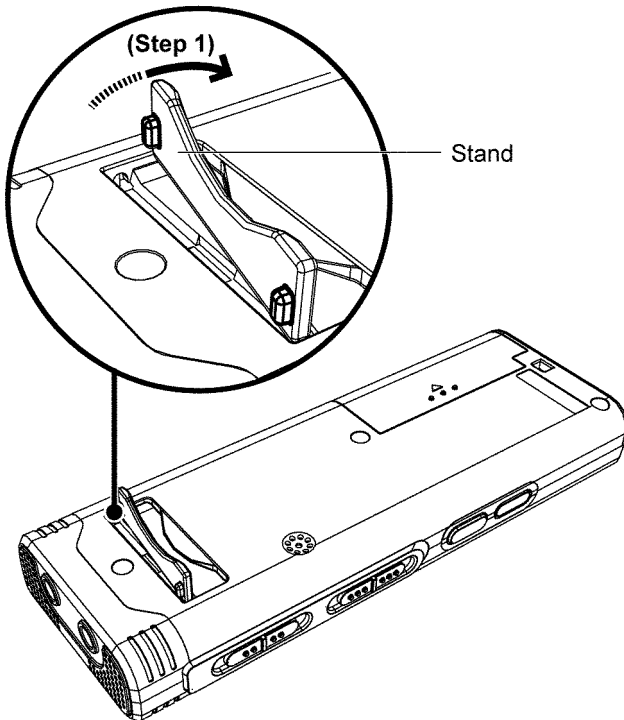
Caution : Do not apply strong force in releasing the catches to avoid damage of the catches.



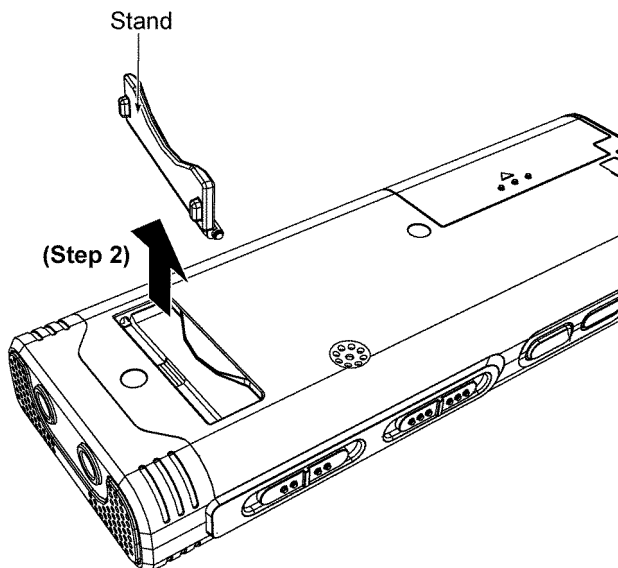
8.5. Disassembly of Stand and Battery Cover

8.5.1. Disassembly of Stand

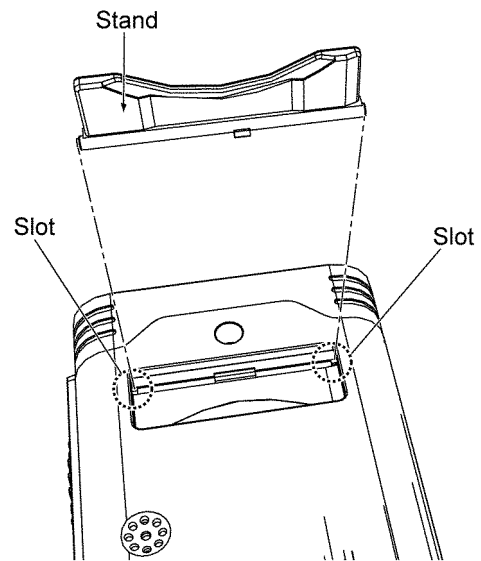
Step 1 : Push out the Stand.



Step 2 : Remove the Stand.

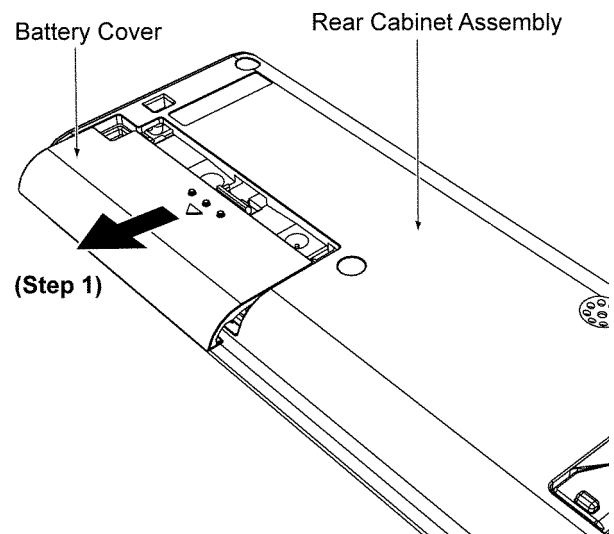


Caution : Ensure the Stand is fixed exactly into the slots during assembly.

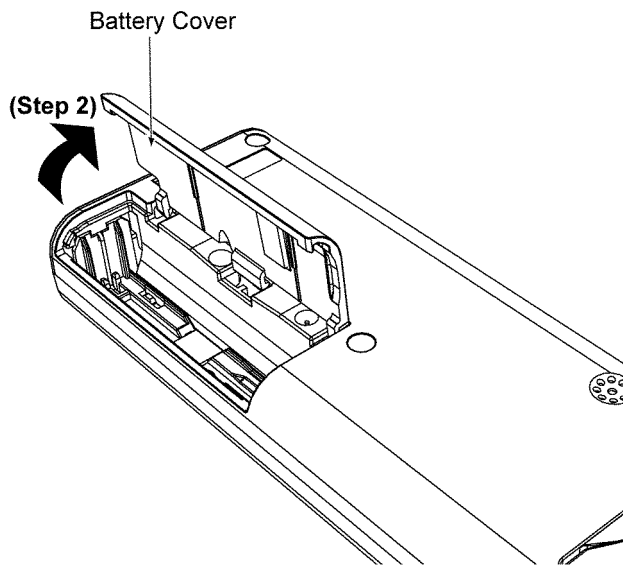


8.5.2. Disassembly of Battery Cover

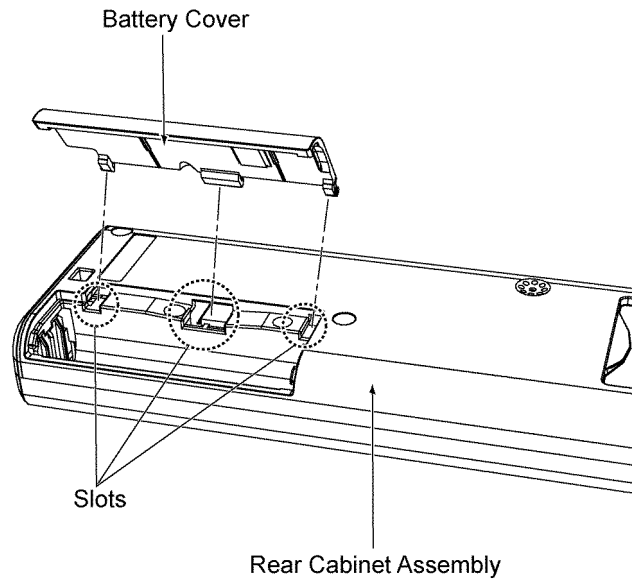
Step 1 : Push open the Battery Cover.



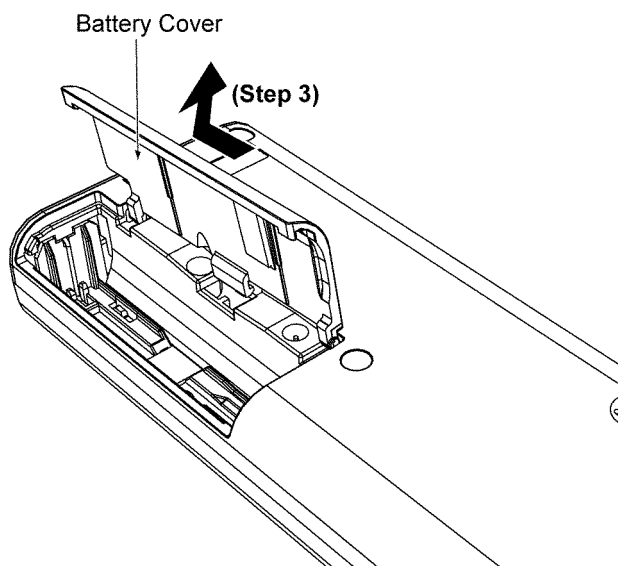
Step 2 : Flip open the Battery Cover.



Caution : Ensure the Battery Cover is fixed exactly into the slots during assembly.



Step 3 : Slightly push out the Battery Cover and remove the Battery Cover.

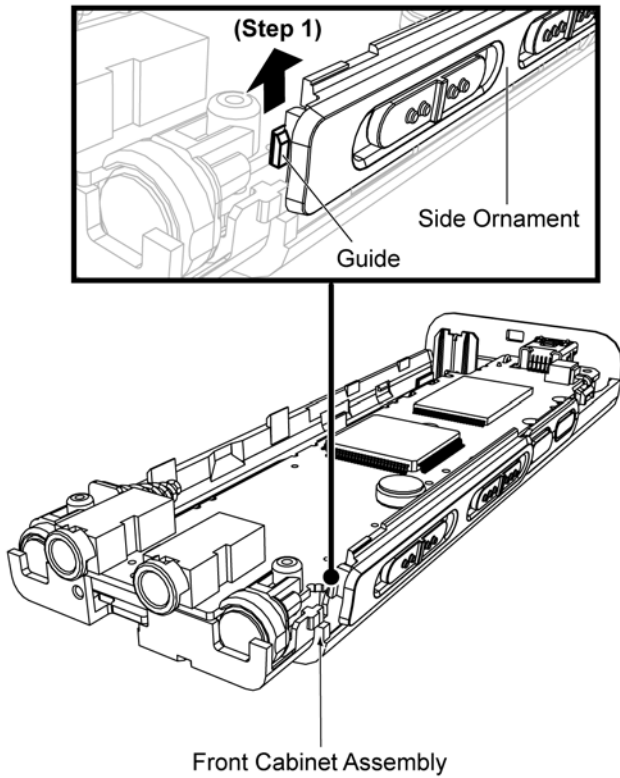


8.6. Replacement of Side Ornament, Mode Knob and Hold Knob

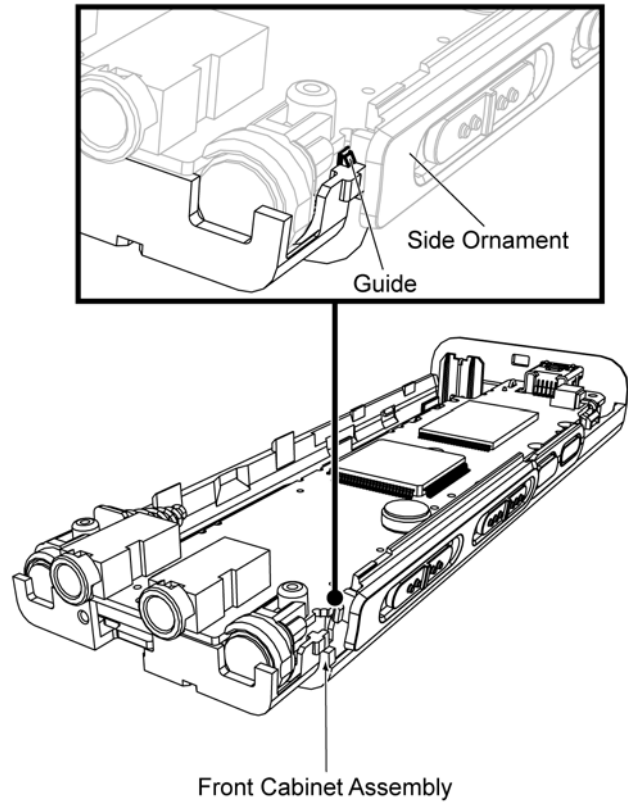
- Follow the (Step 1) - (Step 2) of item 8.3.1.
- Follow the (Step 1) - (Step 8) of item 8.4.

8.6.1. Disassembly of Side Ornament

Step 1 : Slide out the Side Ornament.



Caution : Ensure the guide is fixed exactly onto the Front Cabinet Assembly during assembly.



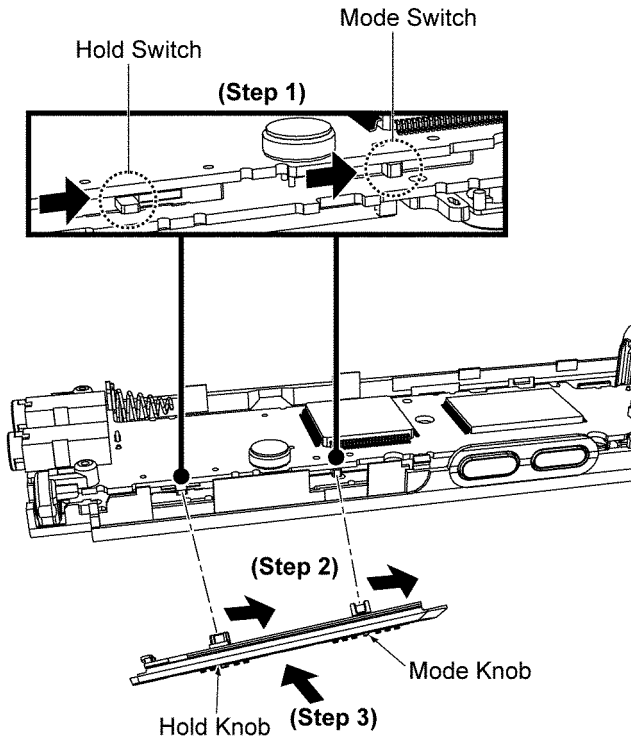
8.6.2. Assembly of Side Ornament

Step 1 : Push Hold switch and Mode switch to the extreme right.

Step 2 : Push Hold Knob and Mode Knob to the extreme right.

Step 3 : Slide in the Side Ornament.

Caution : Ensure Hold Switch and Mode Switch are properly seated in the Hold Knob and Mode Knob.



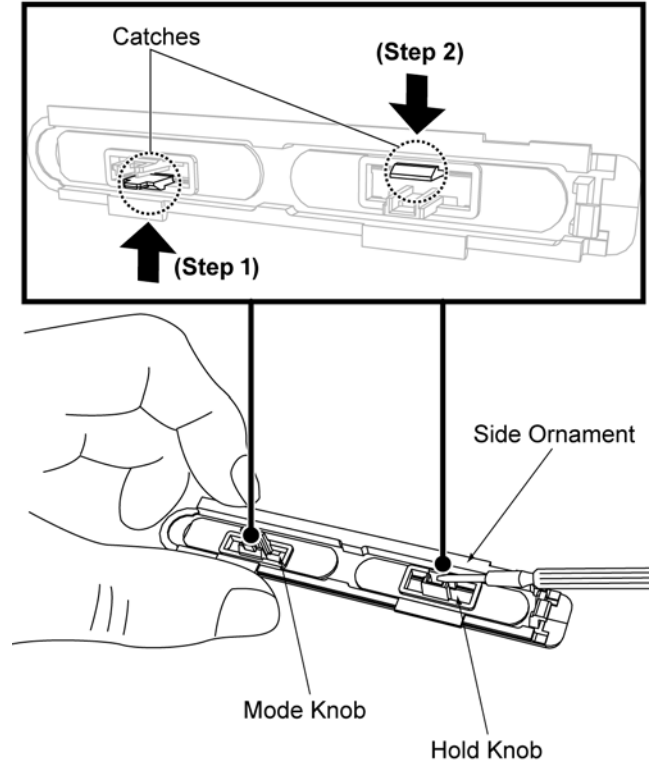
8.6.3. Disassembly of Mode Knob and Hold Knob

Refer to "Disassembly of Side Ornament"

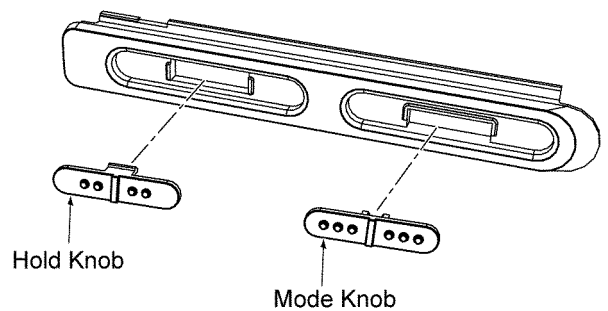
Step 1 : Release the catch to remove the Mode Knob.

Step 2 : Release the catch to remove the Hold Knob.

Caution 1 : Do not apply strong force in releasing the catch to avoid damage of the catch.



Caution 2 : Ensure that Mode Knob and Hold Knob are fixed at the correct location during assembly.

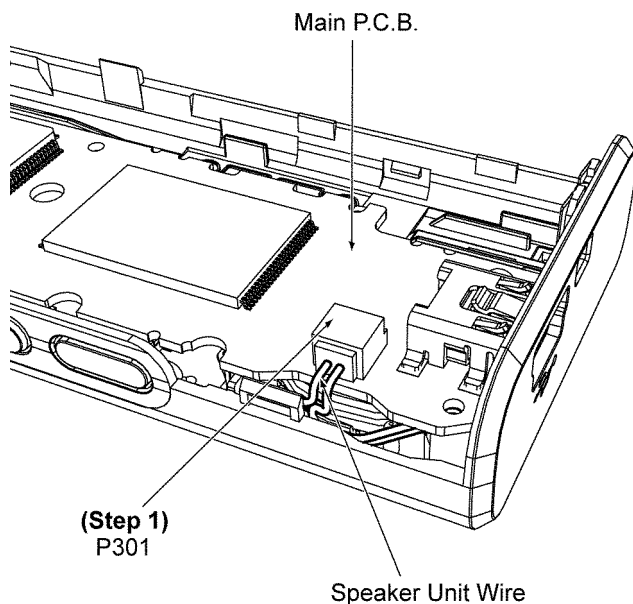


8.7. Replacement of Main P.C.B.

- Follow the (Step 1) - (Step 2) of item 8.3.1.
- Follow the (Step 1) - (Step 8) of item 8.4.
- Follow the (Step 1) of item 8.6.1.

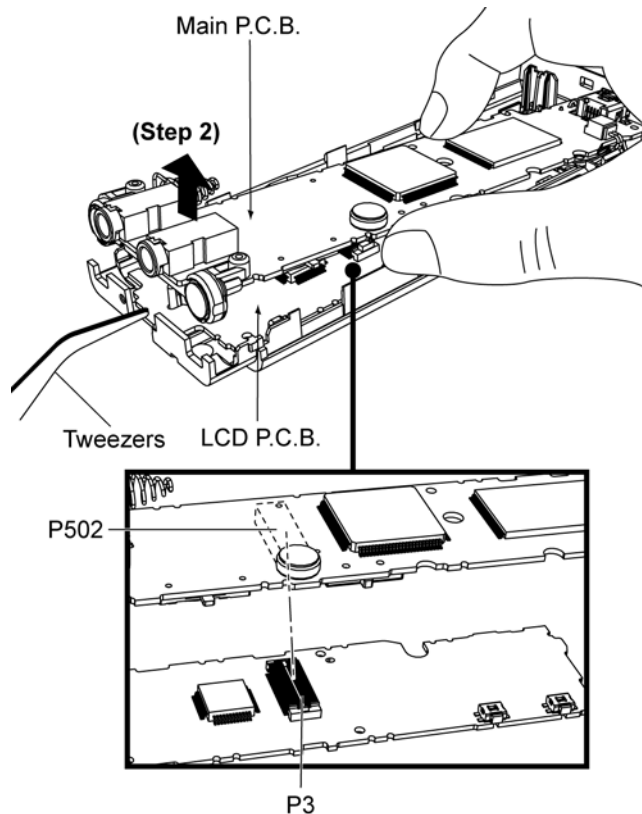
8.7.1. Disassembly of Main P.C.B.

Step 1 : Detach Speaker Unit Wire at connector P301 on Main P.C.B.

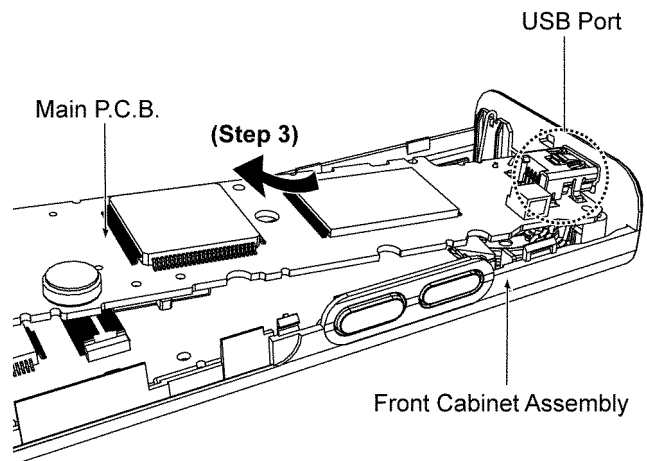


Step 2 : Use a Tweezers to hold down the LCD P.C.B. and lift up the Main P.C.B.

Caution : Main P.C.B. connector P502 and LCD P.C.B. connector P3 will be disconnected.

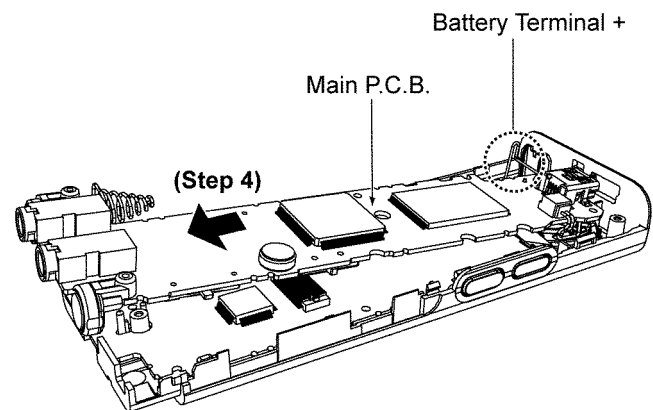


Step 3 : Slide out the Main P.C.B. slightly to release the USB Port from the Front Cabinet Assembly.



Step 4 : Remove the Main P.C.B.

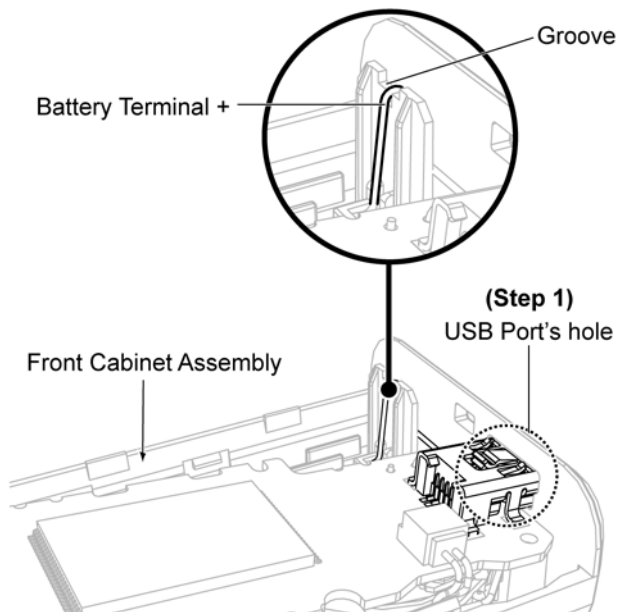
Caution : Ensure the Battery Terminal + is release from the groove when removing the Main P.C.B.



8.7.2. Assembly of Main P.C.B.

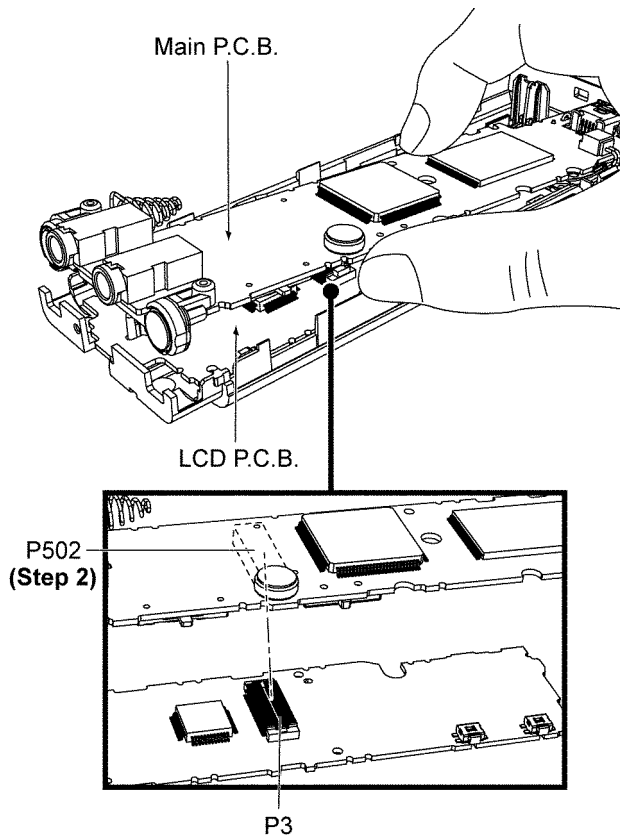
Step 1 : Insert the USB Port into the hole of Front Cabinet Assembly.

Caution : Ensure the Battery Terminal + is slot into the groove.

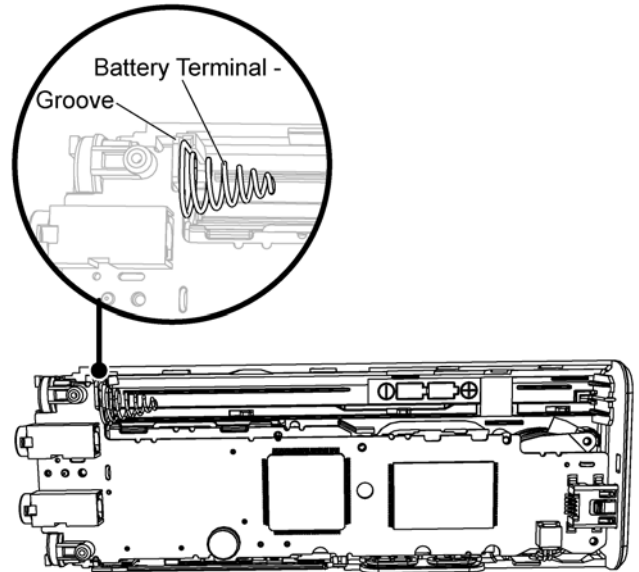


Step 2 : Connect Main P.C.B. connector P502 to LCD P.C.B. connector P3.

Caution 1 : Ensure the connectors are fully caught. A "Click" sound will be heard.

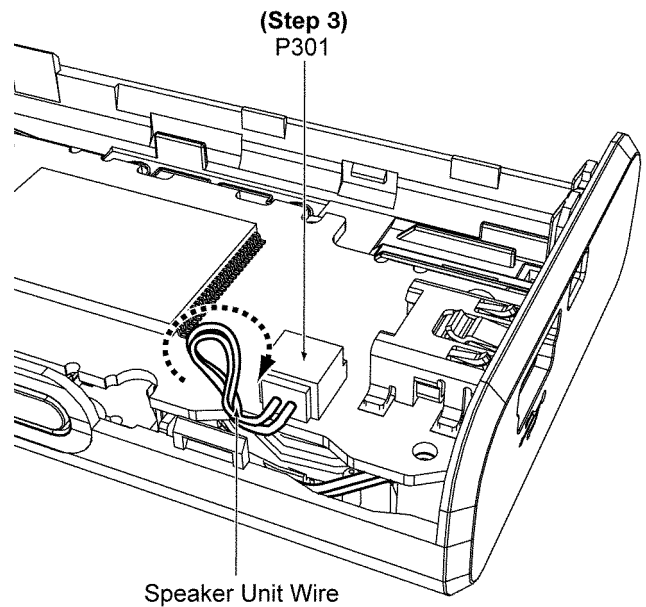


Caution 2 : Ensure the Battery Terminal - is properly seated into the groove.



Step 3 : Connect the Speaker Unit Wire to connector P301 on Main P.C.B.

Caution : Twist the Speaker Unit Wire one round in clockwise direction, press it down to the left side as shown.

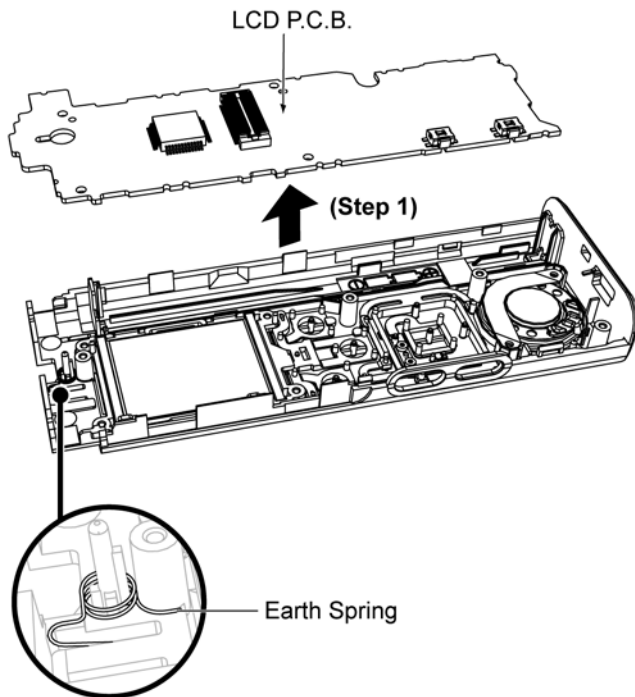


8.8. Disassembly of LCD P.C.B.

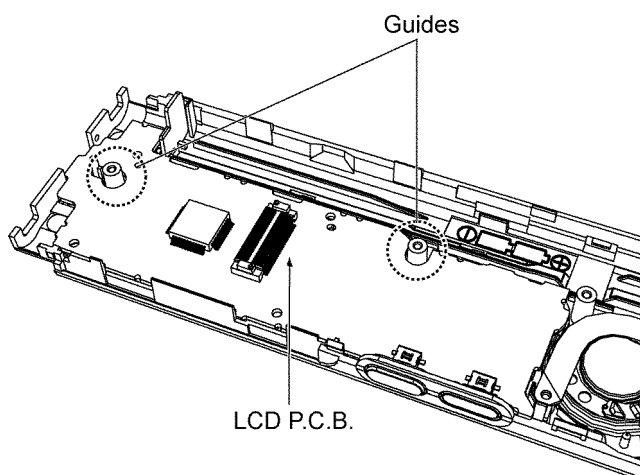
- Follow the (Step 1) - (Step 2) of item 8.3.1.
- Follow the (Step 1) - (Step 8) of item 8.4.
- Follow the (Step 1) of item 8.6.1.
- Follow the (Step 1) - (Step 4) of item 8.7.1.

Step 1 : Remove the LCD P.C.B.

Caution : Keep the Earth Spring in safe place if it falls off. Avoid denting it. Place it back during assembly.



Caution : Ensure the LCD P.C.B. is seated properly

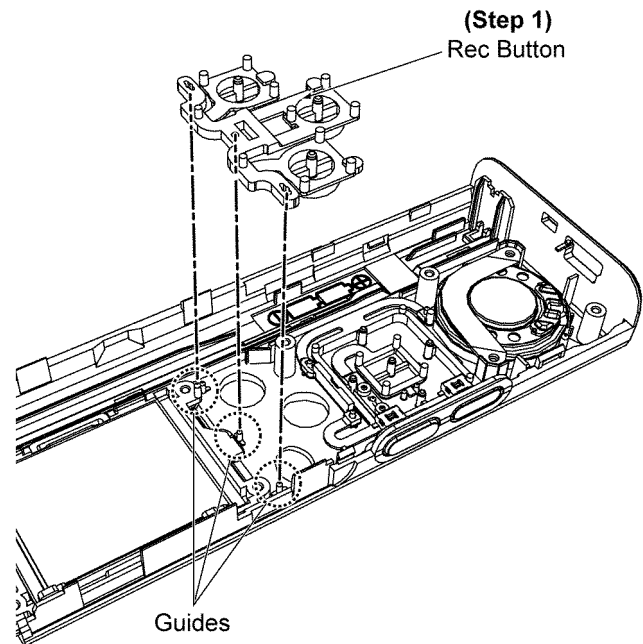


8.9. Disassembly of Rec Button

- Follow the (Step 1) - (Step 2) of item 8.3.1.
- Follow the (Step 1) - (Step 8) of item 8.4.
- Follow the (Step 1) of item 8.6.1.
- Follow the (Step 1) - (Step 4) of item 8.7.1.
- Follow the (Step 1) of item 8.8.

Step 1 : Remove the Rec Button.

Caution : Ensure the Rec Button is fixed exactly onto the guides during assembly.

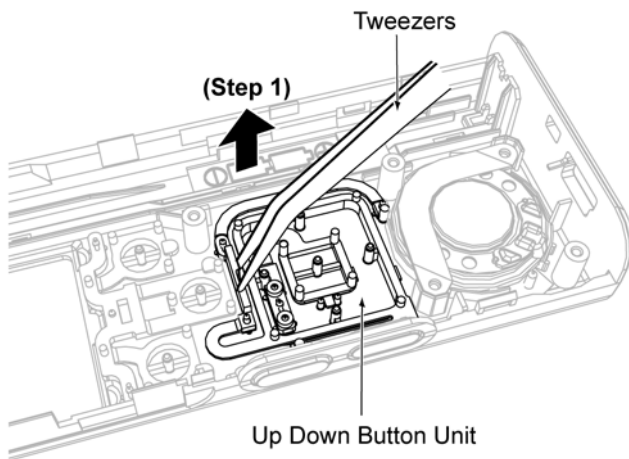


8.10. Disassembly of Up Down Button Unit and Play Button

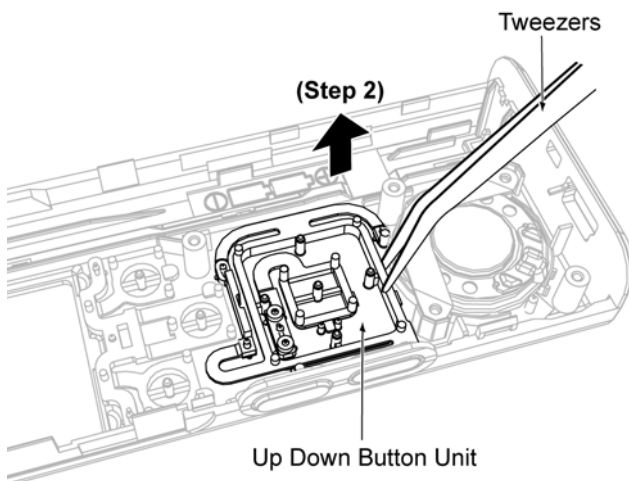
- Follow the (Step 1) - (Step 2) of item 8.3.1.
- Follow the (Step 1) - (Step 8) of item 8.4.
- Follow the (Step 1) of item 8.6.1.
- Follow the (Step 1) - (Step 4) of item 8.7.1.
- Follow the (Step 1) of item 8.8.

8.10.1. Disassembly of Up Down Button Unit

Step 1 : Use Tweezers gently pull one side of the Up Down Button Unit as shown.

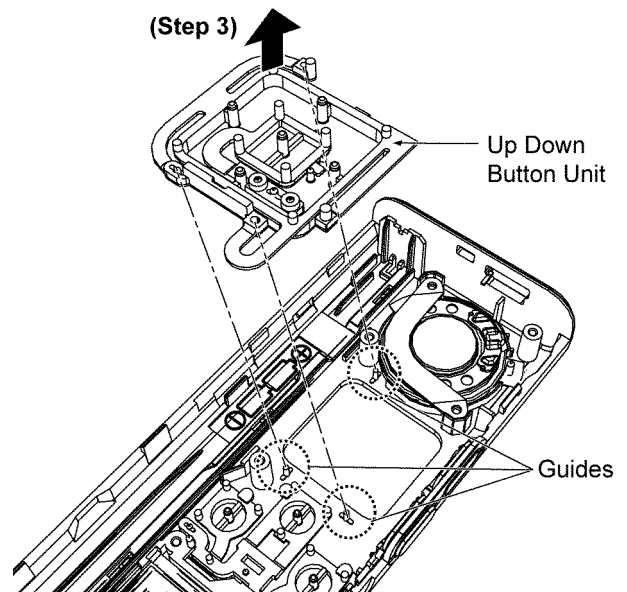


Step 2 : Use Tweezers gently pull the other side of the Up Down Button Unit as shown.



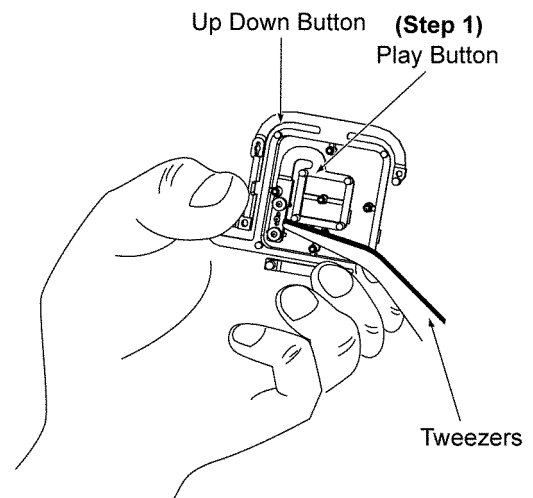
Step 3 : Remove the Up Down Button Unit.

Caution : Ensure the Up Down Button Unit is fixed exactly onto the guides during assembly.



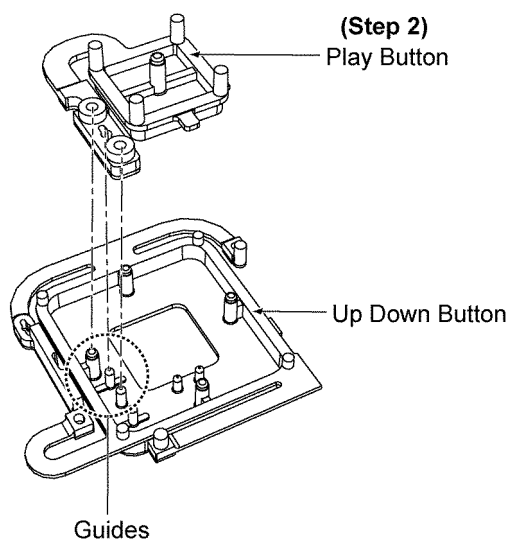
8.10.2. Disassembly of Play Button

Step 1 : Use a Tweezers to lift up the Play Button.



Step 2 : Remove the Play Button.

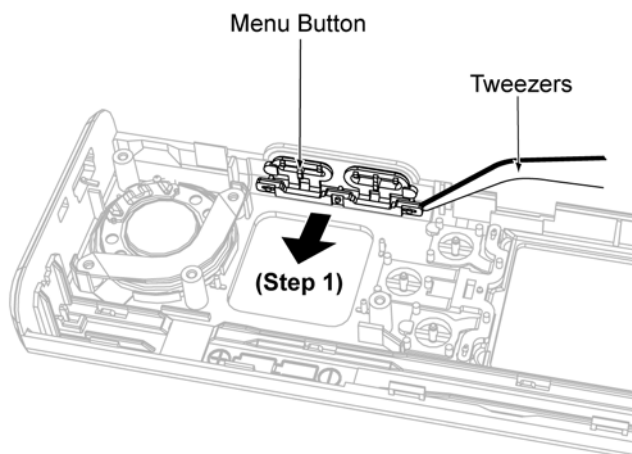
Caution : Ensure the Play Button is fixed exactly onto the guides during assembly.



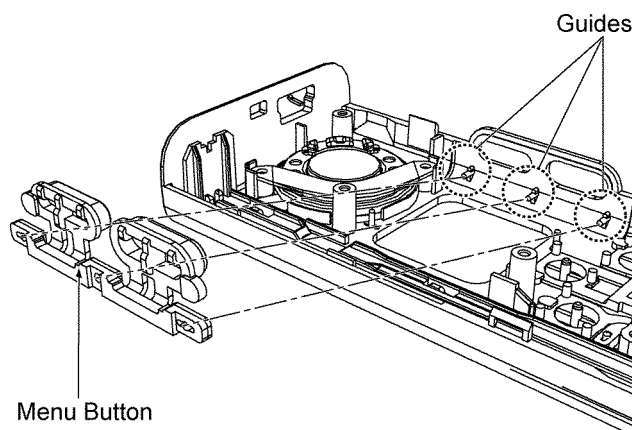
8.11. Disassembly of Menu Button

- Follow the (Step 1) - (Step 2) of item 8.3.1.
- Follow the (Step 1) - (Step 8) of item 8.4.
- Follow the (Step 1) of item 8.6.1.
- Follow the (Step 1) - (Step 4) of item 8.7.1.
- Follow the (Step 1) of item 8.8.
- Follow the (Step 1) - (Step 3) of item 8.10.1.

Step 1 : Use a Tweezers to remove the Menu Button.



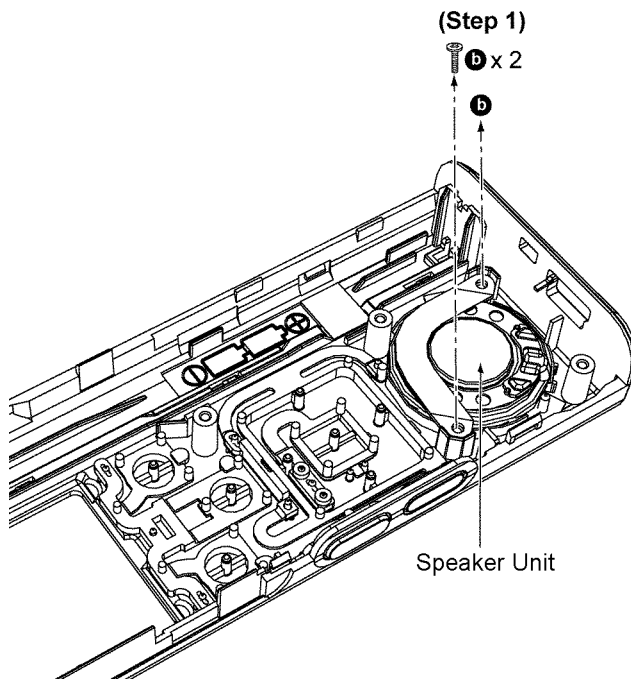
Caution : Ensure the Menu Button is fixed exactly onto the guides during assembly.



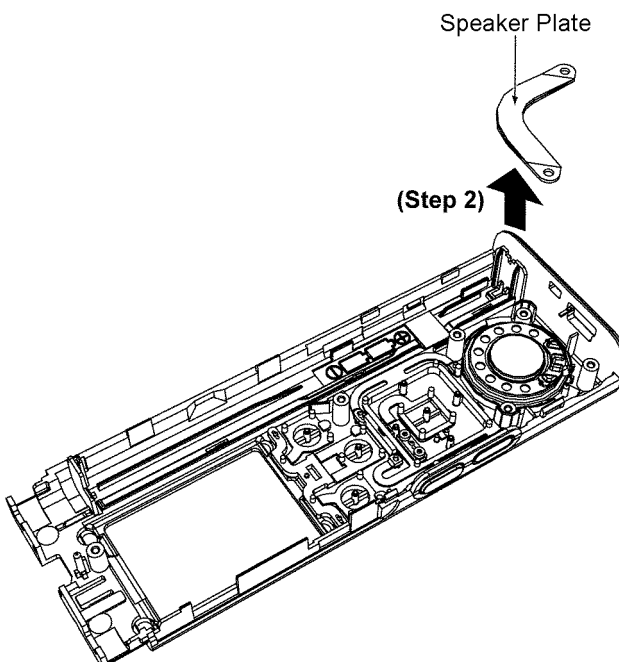
8.12. Disassembly of Speaker Unit

- Follow the (Step 1) - (Step 2) of item 8.4.
- Follow the (Step 1) - (Step 8) of item 8.5.1.
- Follow the (Step 1) - (Step 2) of item 8.6.1.
- Follow the (Step 1) - (Step 5) of item 8.7.1.
- Follow the (Step 1) of item 8.8.

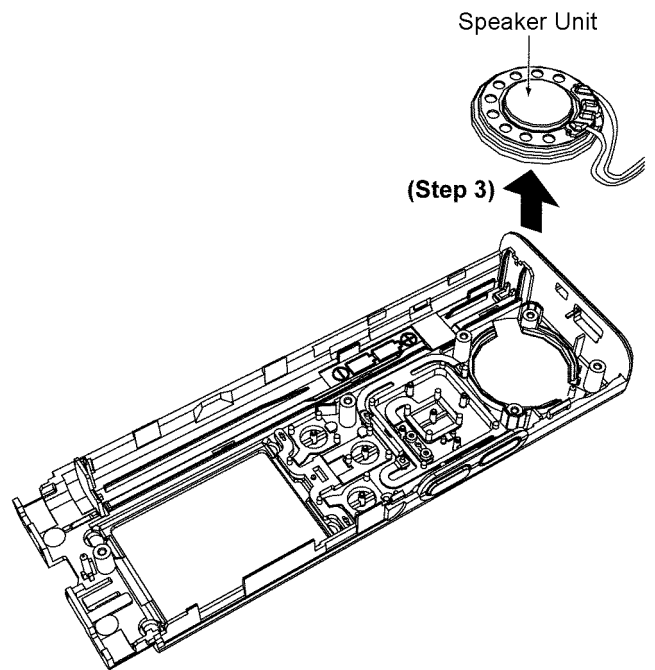
Step 1 : Remove 2 screws.



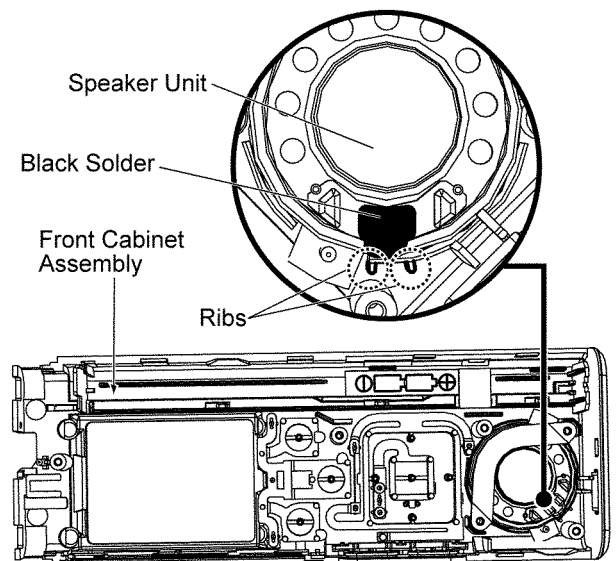
Step 2 : Remove the Speaker Plate.



Step 3 : Remove the Speaker Unit.



Caution : Ensure the Black Solder of the Speaker Unit is positioned in between the 2 Ribs.



8.13. Replacement of Front Ornament

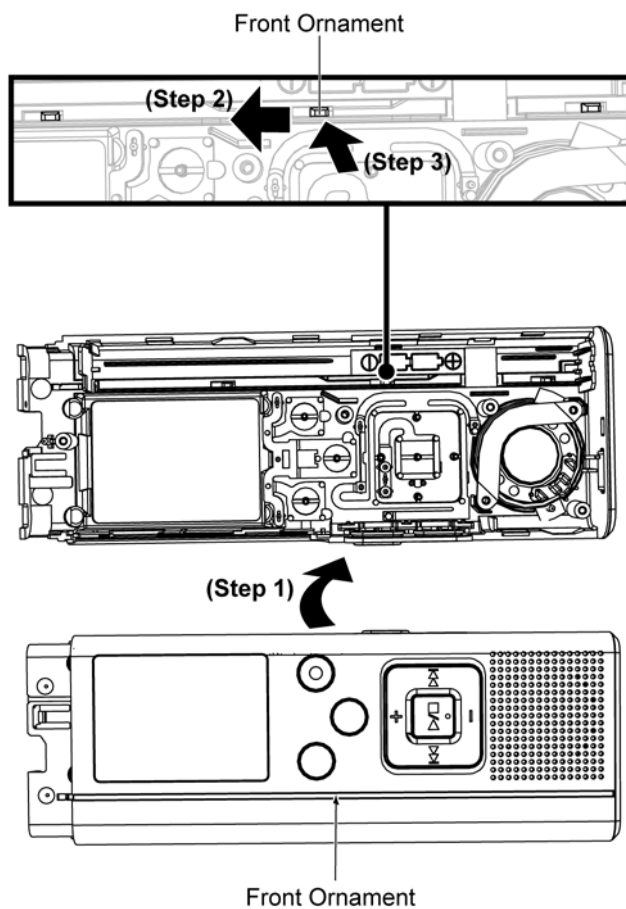
- Follow the (Step 1) - (Step 2) of item 8.3.1.
- Follow the (Step 1) - (Step 8) of item 8.4.
- Follow the (Step 1) of item 8.6.1.
- Follow the (Step 1) - (Step 4) of item 8.7.1.
- Follow the (Step 1) of item 8.8.

8.13.1. Disassembly of Front Ornament

Step 1 : Flip over the Front Cabinet Assembly.

Step 2 : Push the Front Ornament upwards.

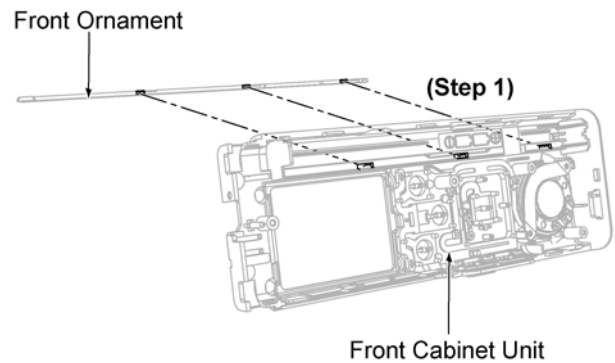
Step 3 : Push out the Front Ornament to remove it.



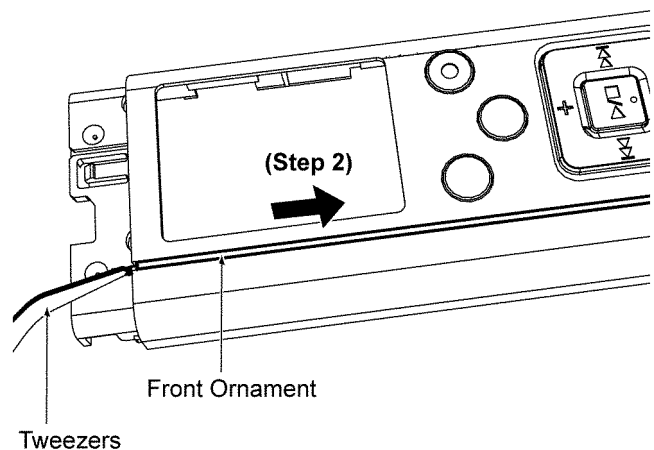
8.13.2. Assembly of Front Ornament

Refer to "Disassembly of Front Ornament"

Step 1 : Fix the Front Ornament.



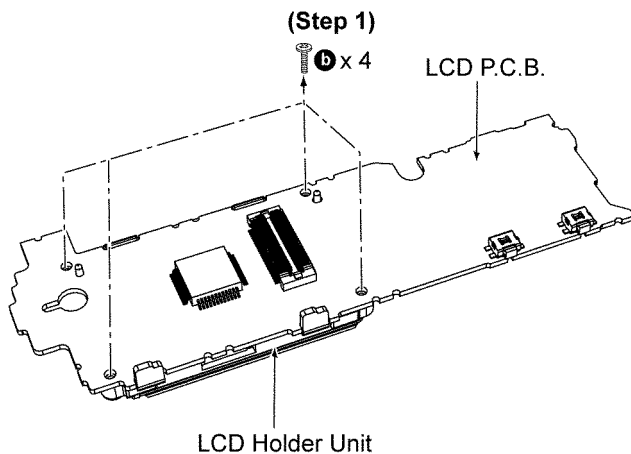
Step 2 : Use a Tweezers push downwards to fix the Front Ornament.



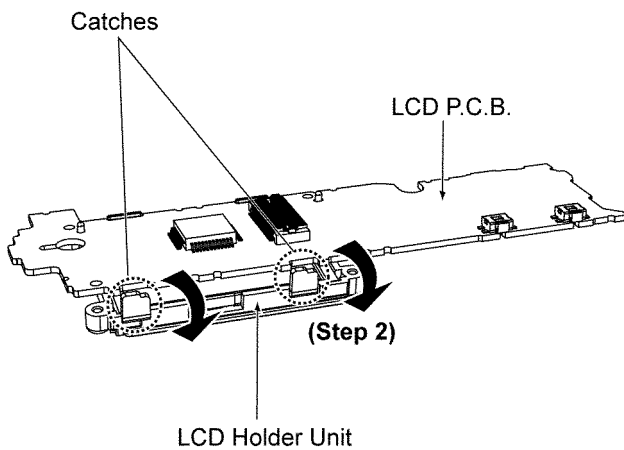
8.14. Disassembly of LCD Holder Unit

- Follow the (Step 1) - (Step 2) of item 8.3.1.
- Follow the (Step 1) - (Step 8) of item 8.4.
- Follow the (Step 1) of item 8.6.1
- Follow the (Step 1) - (Step 4) of item 8.7.1.
- Follow the (Step 1) of item 8.8.

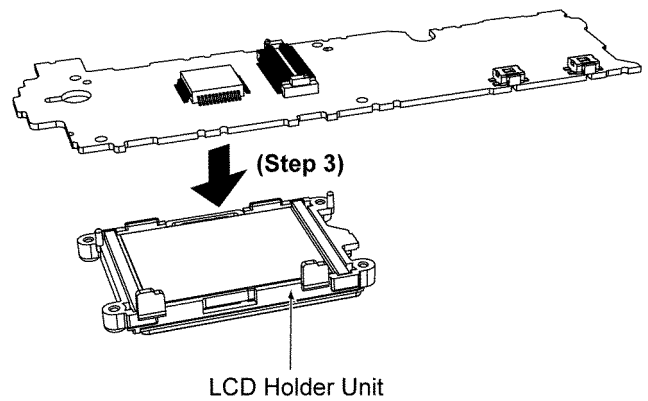
Step 1 : Remove 4 screws.



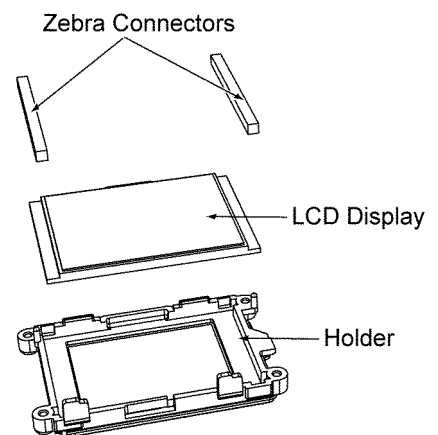
Step 2 : Release 2 catches.



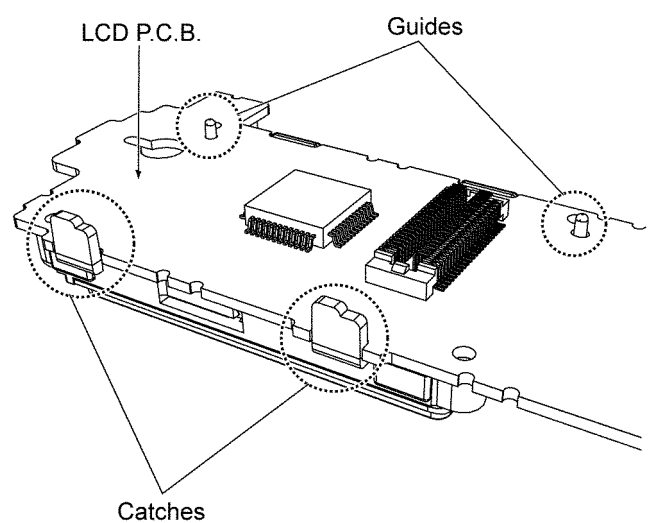
Step 3 : Remove the LCD Holder Unit.



Caution 1 : LCD Display and Zebra Connectors can easily fall off.



Caution 2 : Ensure the LCD Holder Unit guides and catches are fixed exactly onto the LCD P.C.B. during assembly.



9 Service Position

Note: For description of the disassembly procedures, see the Section 8.

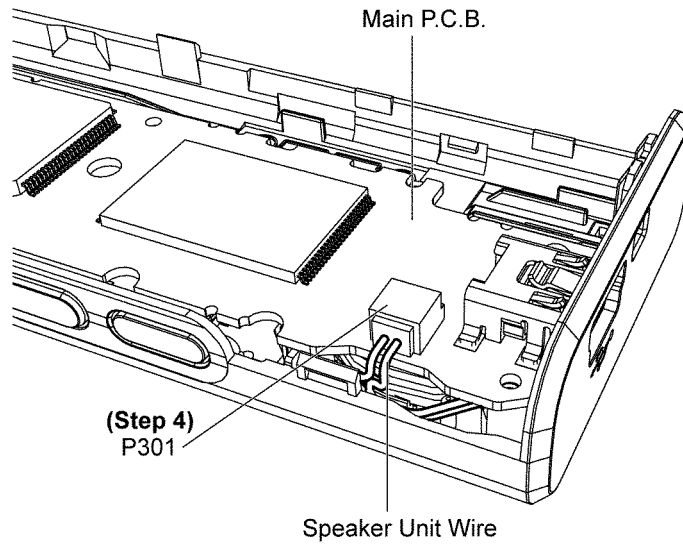
9.1. Checking and Repairing of Main P.C.B. and LCD P.C.B.

Step 1 : Remove the MIC Ornament

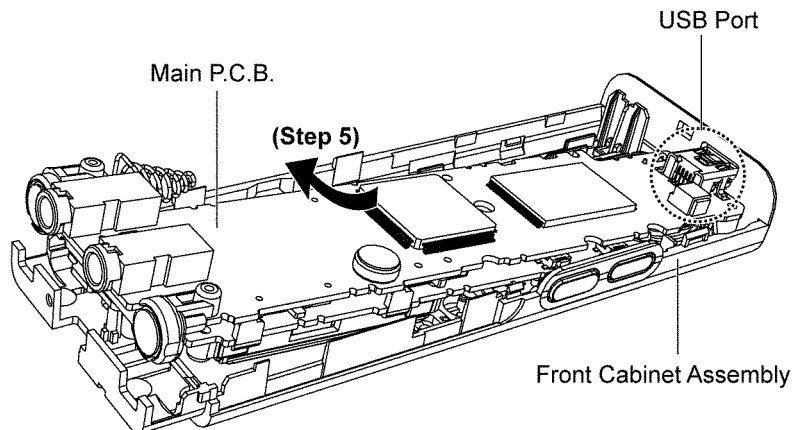
Step 2 : Remove the Rear Cabinet Assembly

Step 3 : Remove the Side Ornament

Step 4 : Detach Speaker Unit Wire at connector P301 on Main P.C.B.

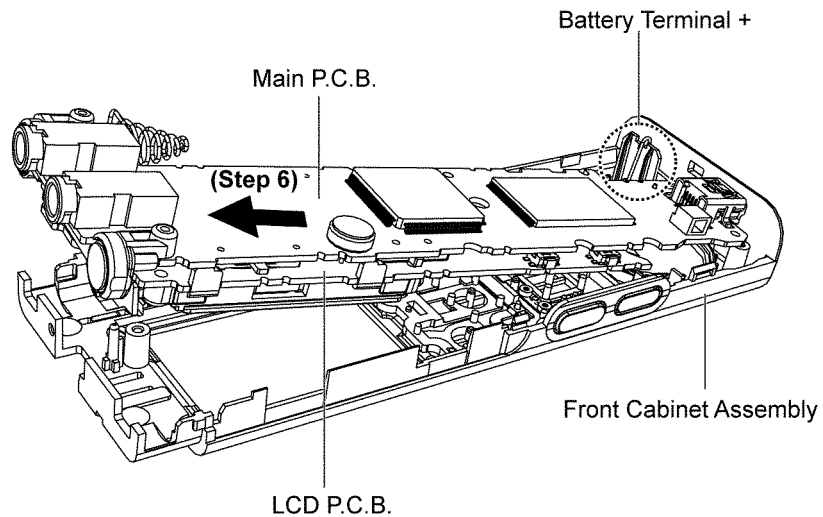


Step 5 : Slide out the Main P.C.B. and LCD P.C.B. slightly to release the USB Port from the Front Cabinet Assembly.



Step 6 : Remove the Main P.C.B. and LCD P.C.B.

Caution : Ensure the Battery Terminal + is release from the groove when removing the Main P.C.B.

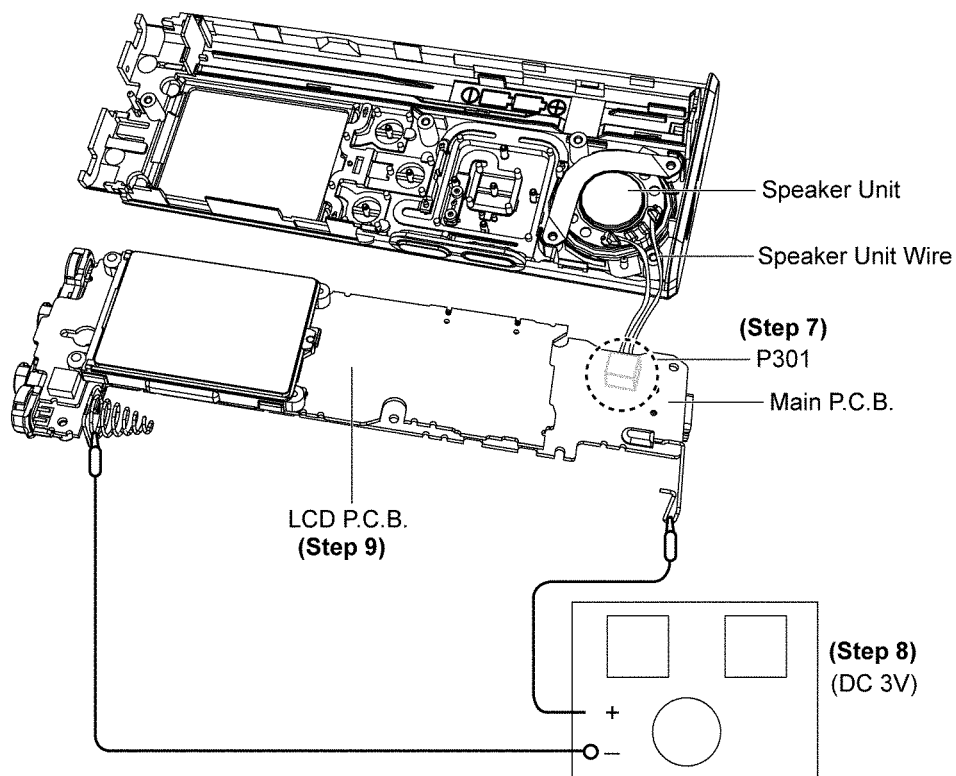


Step 7 : Connect the Speaker Unit Wire to connector P301 on Main P.C.B.

Step 8 : Connect the DC Power supply device to the battery terminal for the power supply.

Step 9 : Checking and repairing LCD P.C.B. and Main P.C.B.

Note : Refer to Troubleshooting Guide of item 7 for composition check.



10 Voltage Measurement & Waveform Chart

Note:

- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard.
- Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
- Circuit voltage and waveform described herein shall be regarded as reference information when probing defect point because it may differ from actual measuring value due to difference of Measuring instrument and its measuring condition and product itself.

10.1. MAIN P.C.B. (1/3)

REF NO.	IC102																			
MODE	1	2	3	4																
PLAY	0	0	2.8	1.2																
STANDBY	0	0	2.8	1.2																
REF NO.	IC103																			
MODE	1	2	3	4																
PLAY	0	0	2.8	2.8																
STANDBY	0	0	2.8	2.8																
REF NO.	IC301																			
MODE	18	20																		
PLAY	2.8	1.4																		
STANDBY	2.8	1.4																		
REF NO.	IC304																			
MODE	8																			
PLAY	2.8																			
STANDBY	2.8																			
REF NO.	IC401																			
MODE	1	2	3	4	5															
PLAY	0	0	0	0	2.8															
STANDBY	0	0	0	0	2.8															
REF NO.	IC402																			
MODE	1	2	3	4	5															
PLAY	0	0	0	0	2.8															
STANDBY	0	0	0	0	2.8															
REF NO.	IC403																			
MODE	1	2	3	4	5	6	7	8												
PLAY	1.2	1.2	1.2	0	1.3	1.3	1.3	2.8												
STANDBY	1.2	1.3	1.2	0	1.3	1.3	1.3	2.8												
REF NO.	IC404																			
MODE	1	2	3	4	5	6	7	8												
PLAY	1.2	1.3	1.3	0	1.3	1.3	1.3	2.4												
STANDBY	1.2	1.3	1.3	0	1.3	1.3	1.3	2.4												
REF NO.	IC405																			
MODE	1	2	3	4																
PLAY	0	0	0	2.8																
STANDBY	0	0	0	2.8																
REF NO.	IC502																			
MODE	1	2	3	4																
PLAY	0	0	0	5.0																
STANDBY	0	0	0	5.0																

RR-US551E/EE/PP MAIN P.C.B.

10.2. MAIN P.C.B. (2/3)

REF NO.	IC503																			
MODE	1	2	3	4																
PLAY	2.8	0	0	5.0																
STANDBY	2.8	0	0	5.0																
REF NO.	IC508																			
MODE	1	2	3	4																
PLAY	1.2	0	2.5	2.6																
STANDBY	1.2	0	2.5	2.6																
REF NO.	IC509																			
MODE	1	2	3	4																
PLAY	1.2	0	0	2.6																
STANDBY	1.2	0	0	2.6																
REF NO.	IC512																			
MODE	1	2	3	4	5	6	7	8	9	10										
PLAY	2.8	2.8	1.2	0	0	3.0	3.0	2.8	2.8	0										
STANDBY	2.8	2.8	1.2	0	0	3.0	3.0	2.8	2.8	0										
REF NO.	IC601																			
MODE	38	42	62	73	98	109	123	137	150	152										
PLAY	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8										
STANDBY	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8										
REF NO.	IC1101																			
MODE	24	25	39	52	53	66	73	77	80	91	96	97	101	105	106	115	116	119		
PLAY	1.2	2.8	2.8	1.2	2.8	1.2	2.8	1.2	1.2	1.2	2.8	2.8	2.8	2.8	2.8	1.2	2.8	2.8		
STANDBY	1.2	2.8	2.8	1.2	2.8	1.2	2.8	1.2	1.2	1.2	2.8	2.8	2.8	2.8	2.8	1.2	2.8	2.8		
REF NO.	Q101																			
MODE	S	D	G		S	D	G		E	C	B		S	D	G		E	C	B	
PLAY	0	0	2.8		0	0	0		0	0	0		0	0	0		0	0	0	
STANDBY	0	0	2.8		0	0	0		0	0	0		0	0	0		0	0	0	
REF NO.	Q423																			
MODE	S	D	G		S	D	G		S	D	G		E	C	B		E	C	B	
PLAY	0	0	0		0	0	2.8		0	0	2.8		0	2.5	1.7		0	0	0	
STANDBY	0	0	0		0	0	0		0	0	0		0	0	0		0	0	0	
REF NO.	Q505																			
MODE	S	D	G		S	D	G		E	C	B		E	C	B		E	C	B	
PLAY	2.8	0	2.6		0.9	0.9	2.8		3	2.9	2.4		2.8	0	2.8		2.8	2.8	2.3	
STANDBY	2.8	0	2.6		0.9	0.9	2.8		3	2.9	2.4		2.8	0	2.8		2.8	2.8	2.3	
REF NO.	Q525																			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
PLAY	0	0	0.5		1.5	1.5	0		0	2.8	0		2.8	2.8	0		2.8	2.8	0	
STANDBY	0	0	0.7		1.5	1.5	0		0	2.8	0		2.8	2.8	0		2.8	2.8	0	

RR-US551E/EE/PP MAIN P.C.B.

10.3. MAIN P.C.B. (3/3)

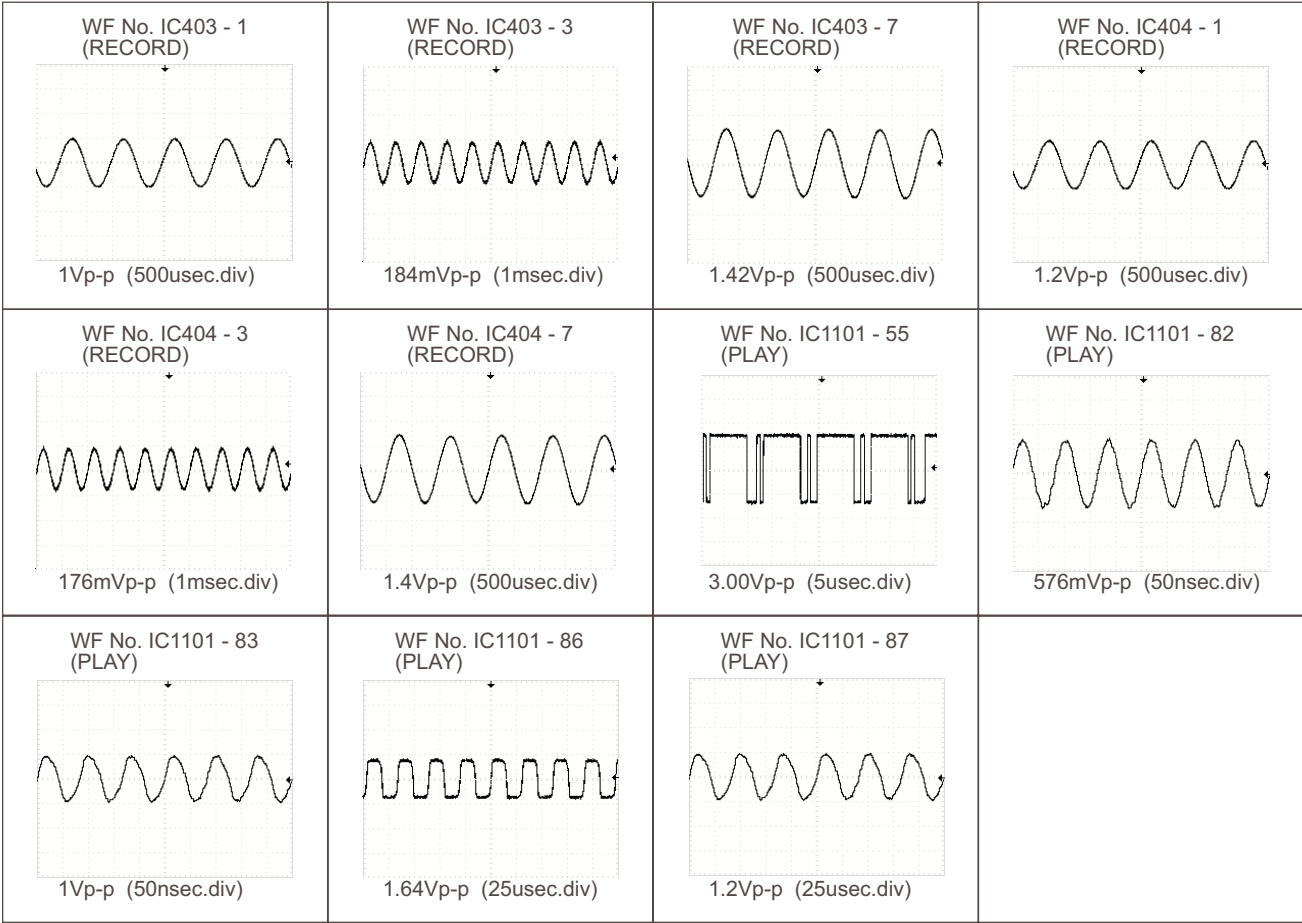
REF NO.	QR406				QR409				QR470				QR471				QR501			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
PLAY	0	2.8	2.8		2.5	0	2.5		0	2.8	0		0	0	0		0	0	0	
STANDBY	0	2.8	2.8		0	0	0		0	2.8	0		0	0	2.8		0	0	0	
REF NO.	QR506				QR521				QR522				QR523				QR526			
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B	
PLAY	0	2.7	0		0	2.8	0		0	0	0		2.5	0	2.5		0	0	0	
STANDBY	0	2.7	0		0	2.8	0		0	0	0		0	0	0		0	0	0	
RR-US551E/EE/PP MAIN P.C.B.																				

10.4. LCD P.C.B.

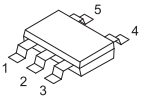
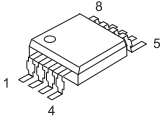
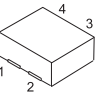
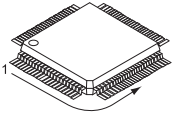
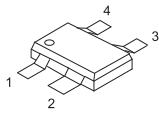
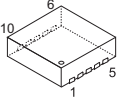
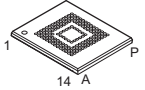
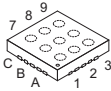
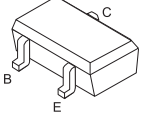
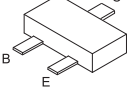
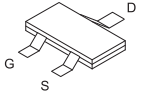
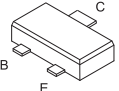
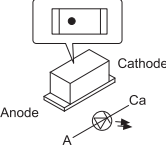
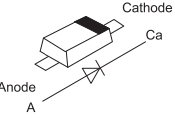
REF NO.	IC105																			
MODE	1	2	3	4																
PLAY	2.9	0	1.5	2.3																
STANDBY	2.9	0	1.5	2.3																
REF NO.	IC106																			
MODE	1	2	3	4																
PLAY	1.5	0	1.2	1.5																
STANDBY	1.5	0	1.2	1.5																
REF NO.	IC201																			
MODE	39	40																		
PLAY	2.8	2.8																		
STANDBY	2.8	2.8																		

RR-US551E/EE/PP LCD P.C.B.

10.5. Waveform Chart

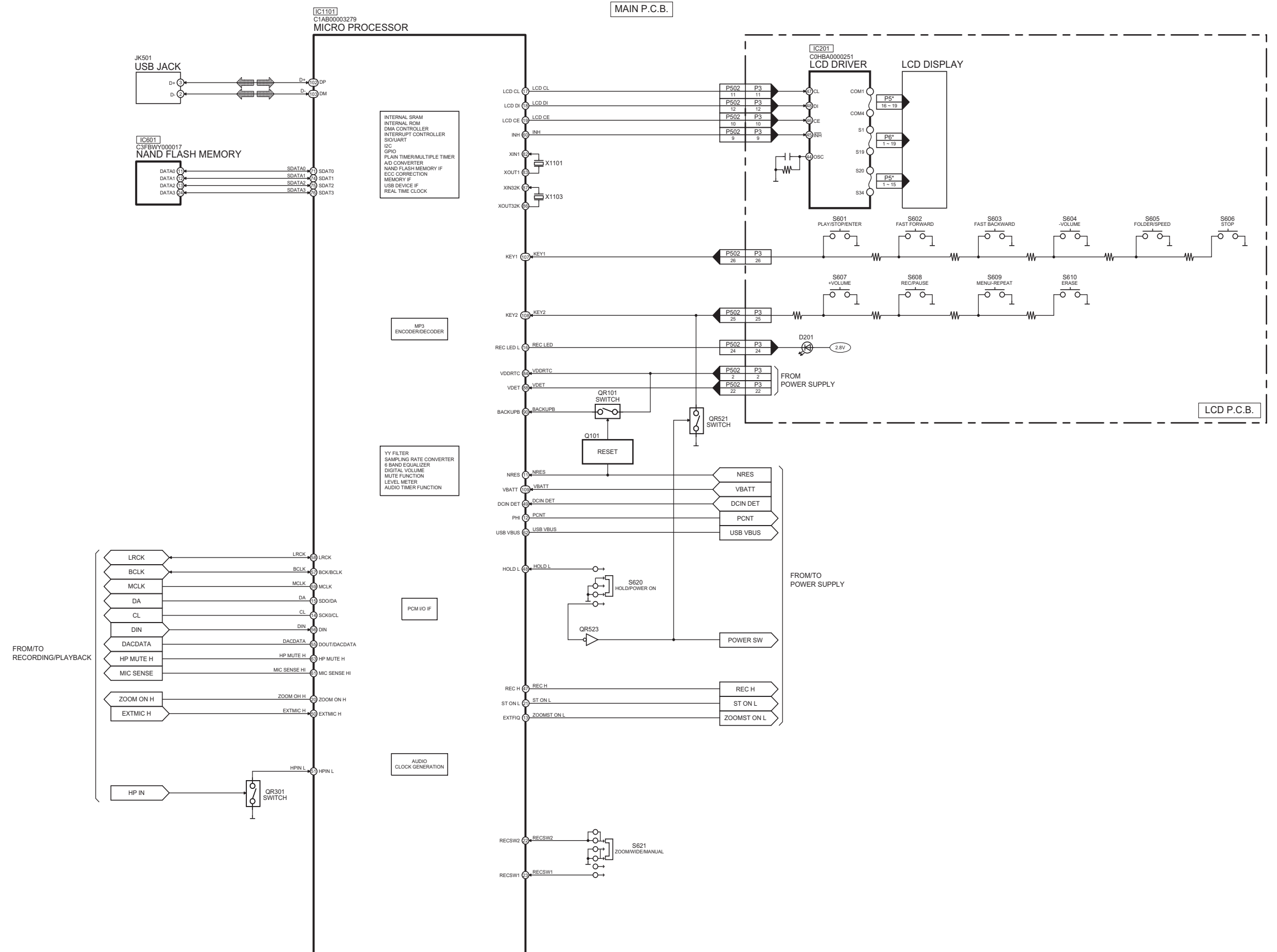


11 Illustration of IC's, Transistors and Diodes

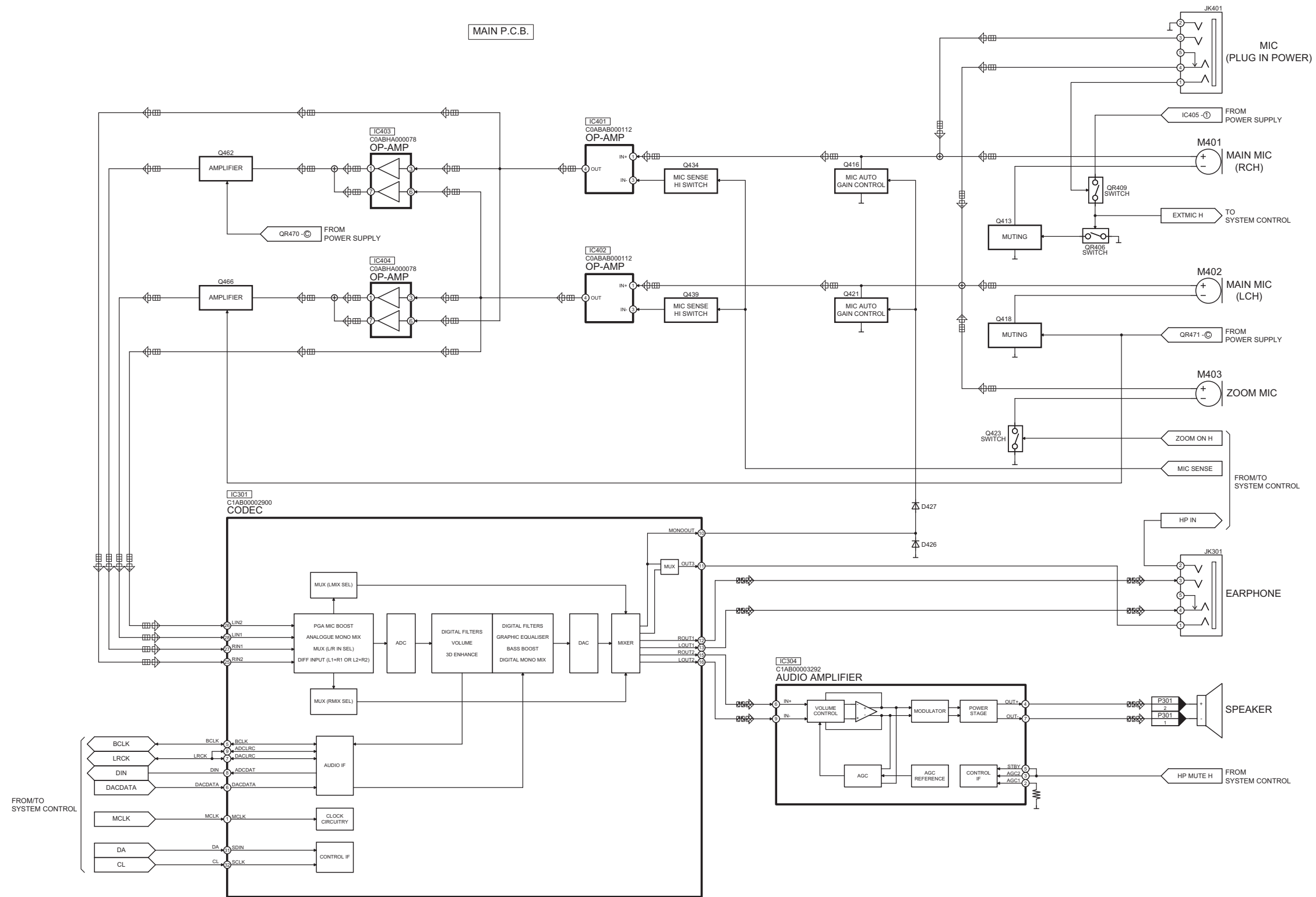
C0ABAB000112 	C0ABHA000078 	C0DBGYY00462 C0DBGYY00463 C0DBGYY00464 C0DBGYY00497 	C0HBA0000251(48P) C1AB00002900(32P) C1AB00003279(120P) 	C0DBGYY00990 C0EBA0000046 C0EBB0000201 C0EBE0000599 C0EBF0000475 	C0DBAYY00754 
C3FBWY000017 	C1AB00003292 	B1CFFB000001 B1CFHC000003 	B1ABCF000226 B1ABMD000012 B1ADCF000166 B1GBCFNN0042 B1GDCFJA0025 B1GDCFJN0023 		B1DHCC000034 
B1GBCFJN0037 	B3AAB0000037 	B0ACCJ000027 B0JCDD000019 			

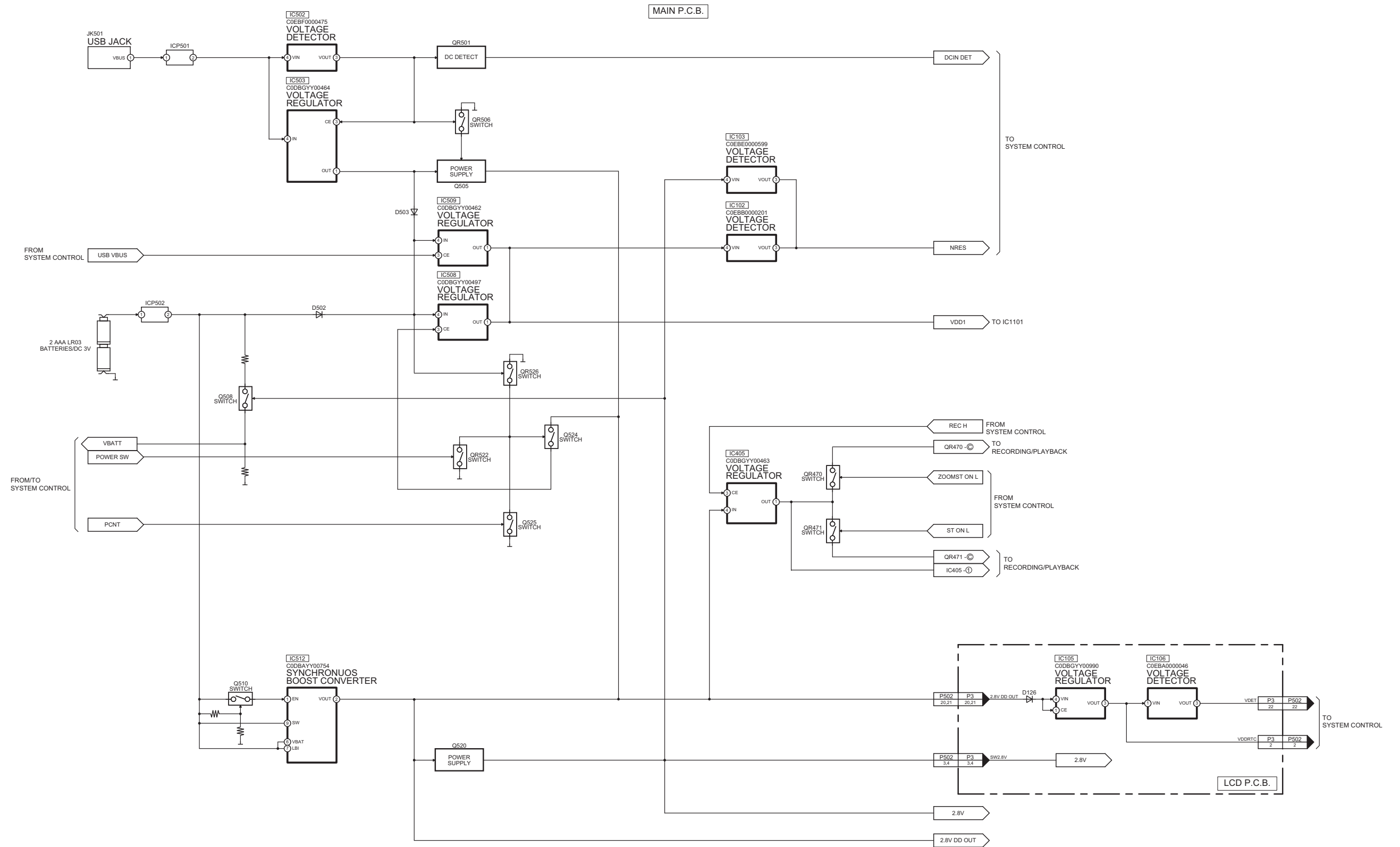
12 Block Diagram

: USB SIGNAL LINE



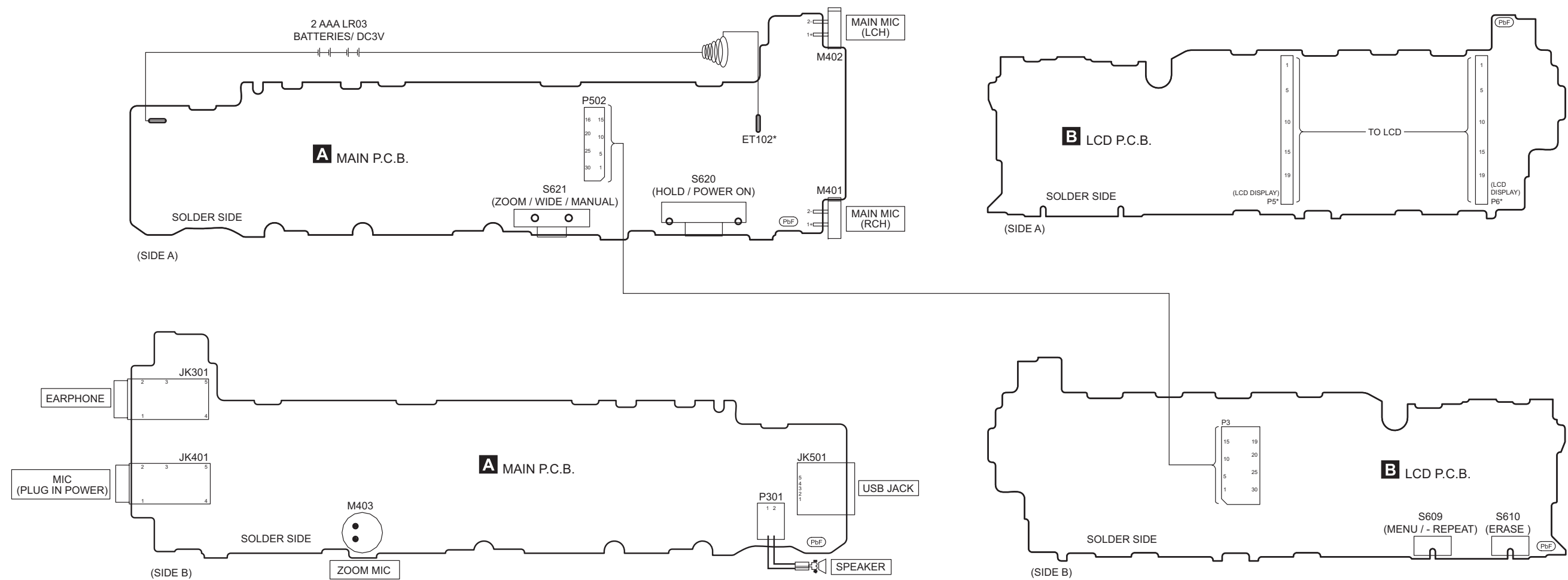
 : MIC AUDIO INPUT SIGNAL LINE
  : AUDIO OUTPUT SIGNAL LINE





RR-US551E/EE/PP POWER SUPPLY BLOCK DIAGRAM

13 Wiring Connection Diagram



NOTE: " * " REF IS FOR INDICATION ONLY.

14 Schematic Diagram Notes

(All schematic diagrams may be modified at any time with the development of new technology)

Notes:

S601:	Play/Stop/Enter switch (▶/■)
S602:	Fast forward switch. (▶▶)
S603:	Fast backward switch. (◀◀)
S604:	- Volume switch.
S605:	FOLDER/SPEED switch
S606:	STOP switch
S607:	+ Volume switch
S608:	REC/PAUSE switch
S609:	(A-B repeat/Repeat)/-MENU switch (•A-B↺)
S610:	ERASE switch
S620:	Hold/Power On (OPR/HOLD) switch
S621:	ZOOM/WIDE/MANUAL switch

- “ * ” REF IS FOR INDICATION ONLY.

• Importance safety notice :

Components identified by (⚡) mark have special characteristics important for safety.

Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.

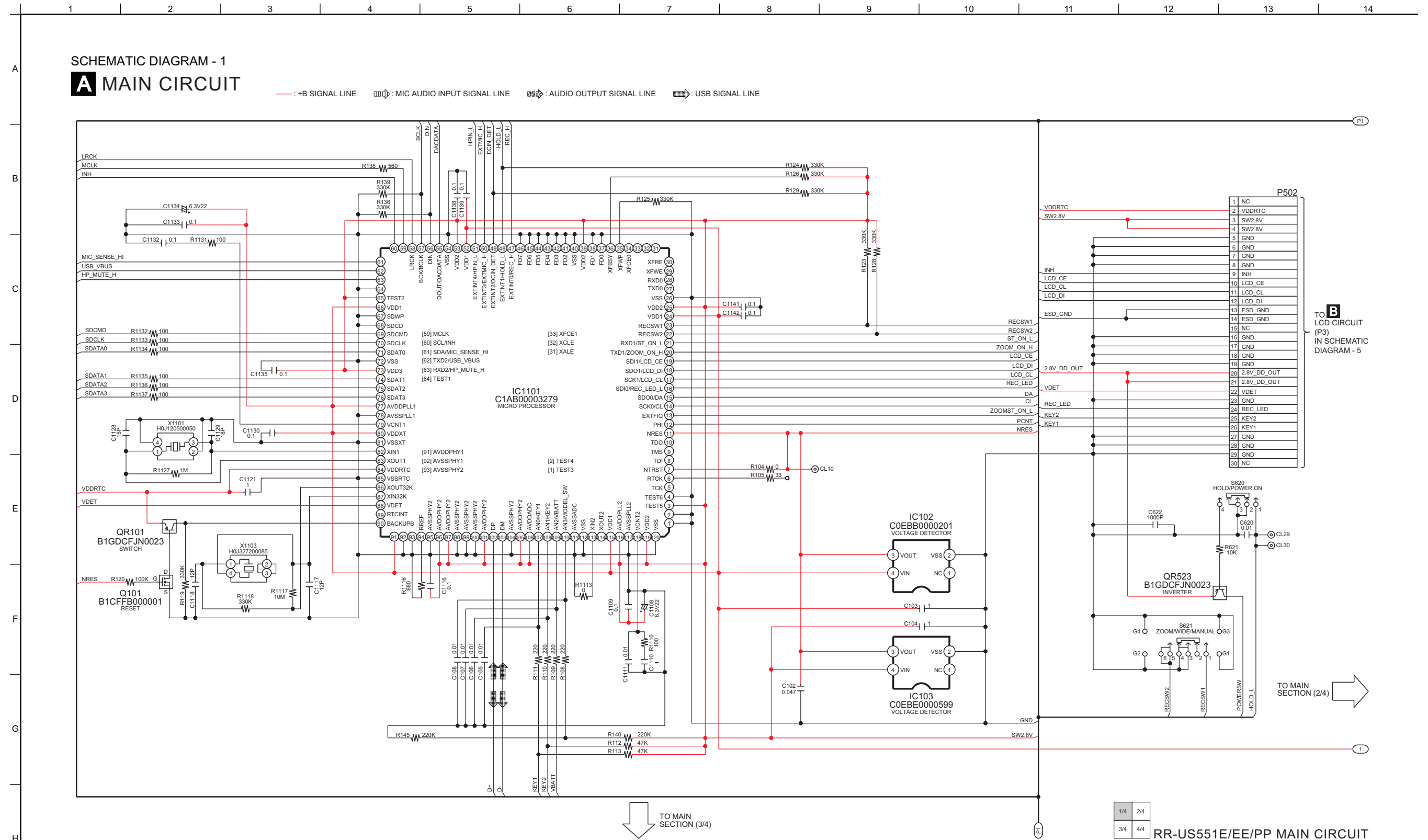
When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

- Capacitor values are in microfarad(μF) unless specified otherwise, F=Farad, pF=Pico-Farad
Resistance values are in ohm(Ω), unless specified otherwise, 1K=1,000Ω, 1M=1,000KΩ

• Voltage and Signal lines:

	: +B signal line
	: MIC Audio Input signal line
	: Audio Output signal line
	: USB signal line

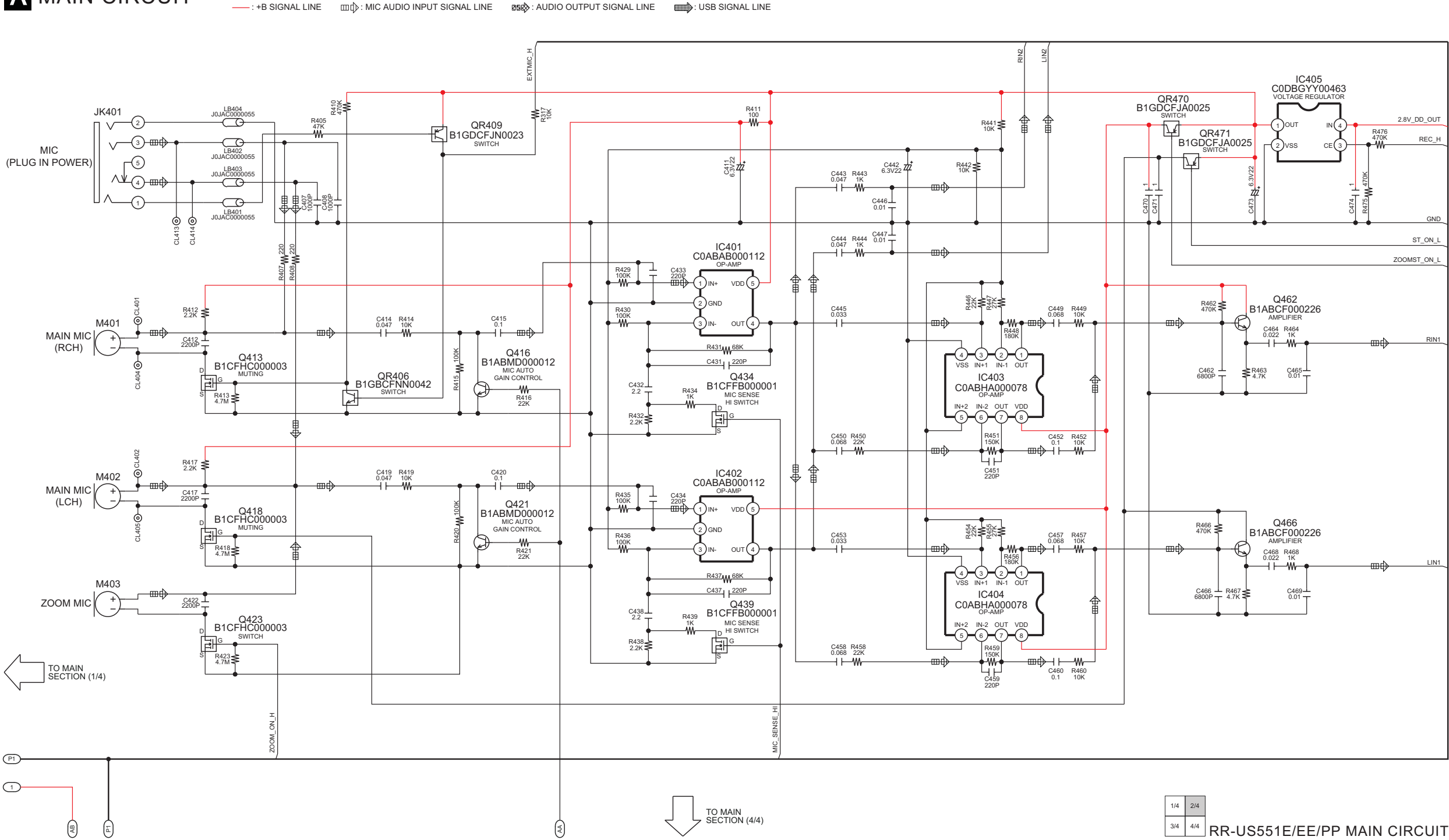
15.1. MAIN CIRCUIT (1/4)



15.2. MAIN CIRCUIT (2/4)

SCHEMATIC DIAGRAM - 2

A MAIN CIRCUIT

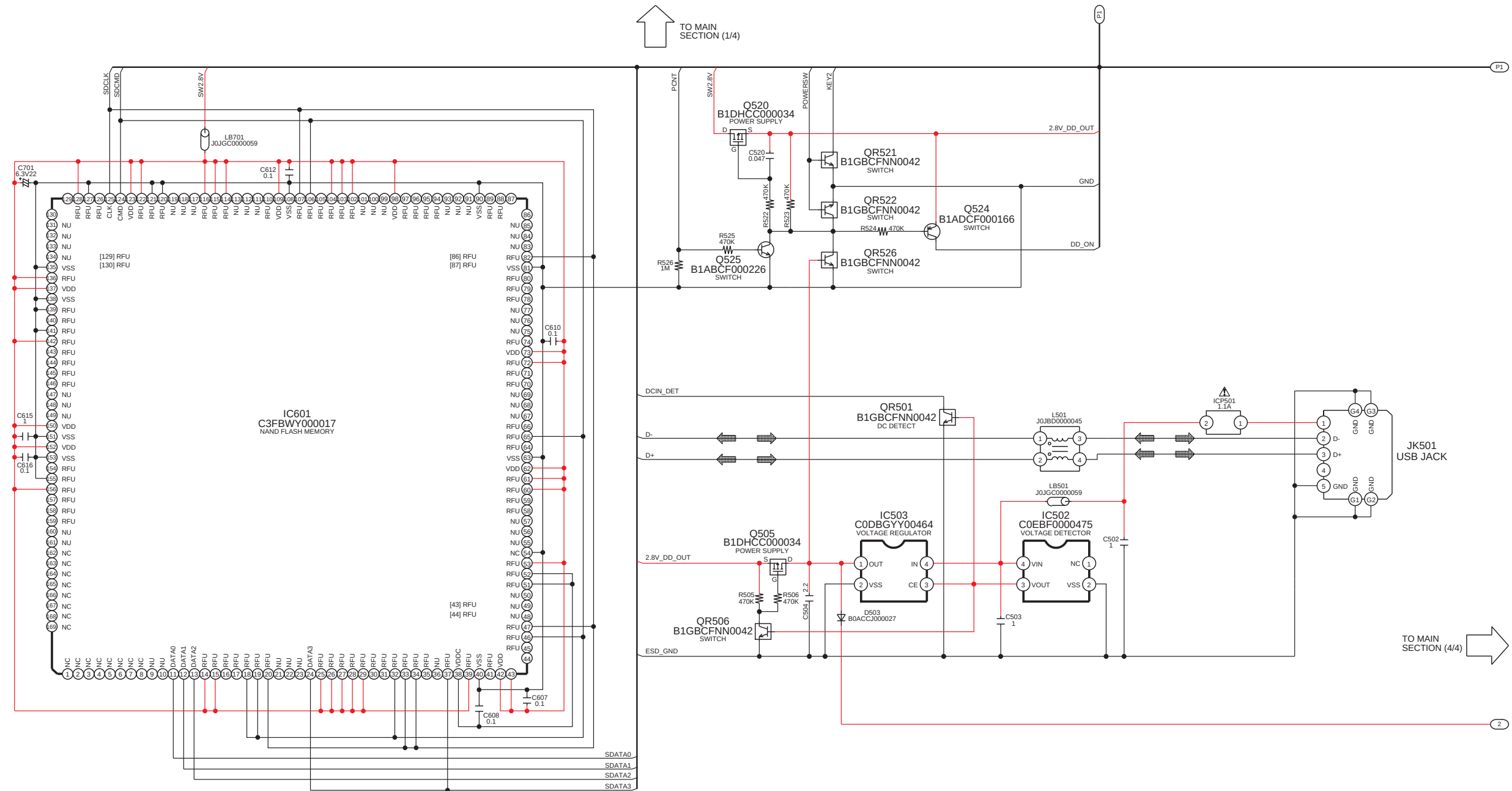


15.3. MAIN CIRCUIT (3/4)

SCHEMATIC DIAGRAM - 3

A MAIN CIRCUIT

— : +B SIGNAL LINE : MIC AUDIO INPUT SIGNAL LINE : AUDIO OUTPUT SIGNAL LINE : USB SIGNAL LINE



NOTE: AFTER IC601 IS REPLACED, ID DATA SHOULD BE WRITTEN IN THE IC.
PLEASE CONTACT TO NEAREST SERVICE COMPANY OR CS CENTER.

1/4	2/4
3/4	4/4

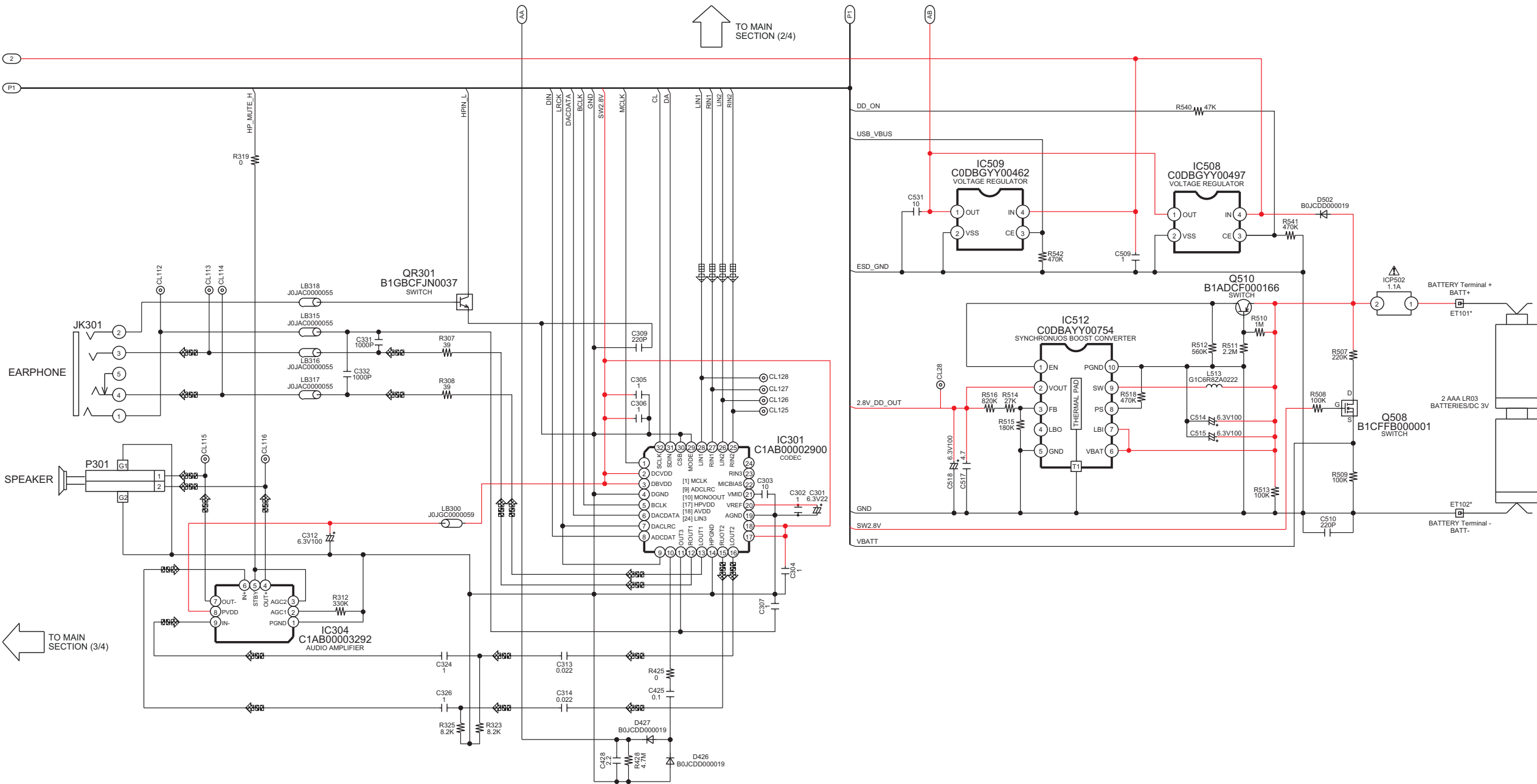
RR-US551E/EE/PP MAIN CIRCUIT

15.4. MAIN CIRCUIT (4/4)

SCHEMATIC DIAGRAM - 4

A MAIN CIRCUIT

— : +B SIGNAL LINE : MIC AUDIO INPUT SIGNAL LINE : AUDIO OUTPUT SIGNAL LINE : USB SIGNAL LINE

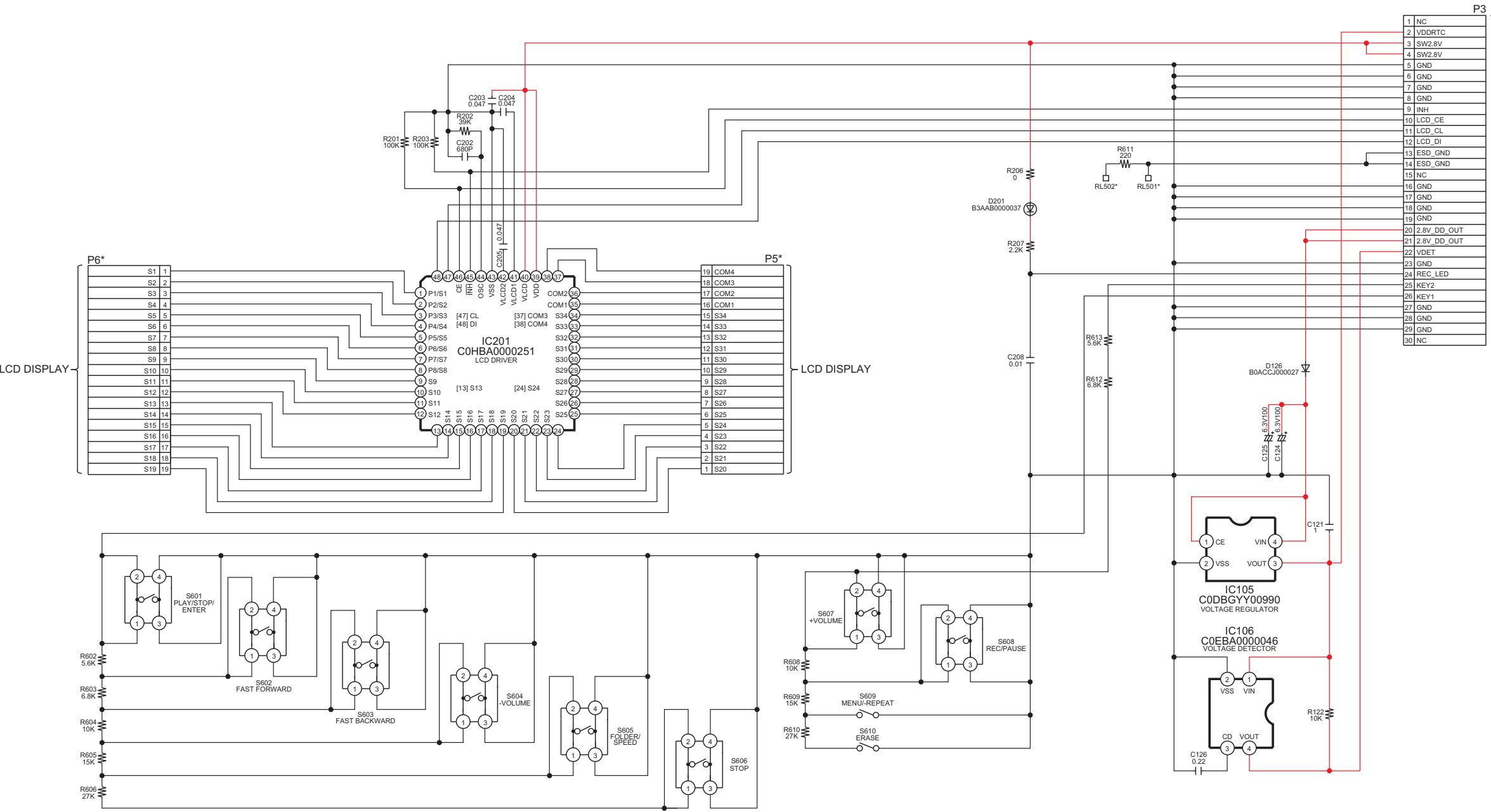


15.5. LCD CIRCUIT

SCHEMATIC DIAGRAM - 5

B LCD CIRCUIT

—: +B SIGNAL LINE

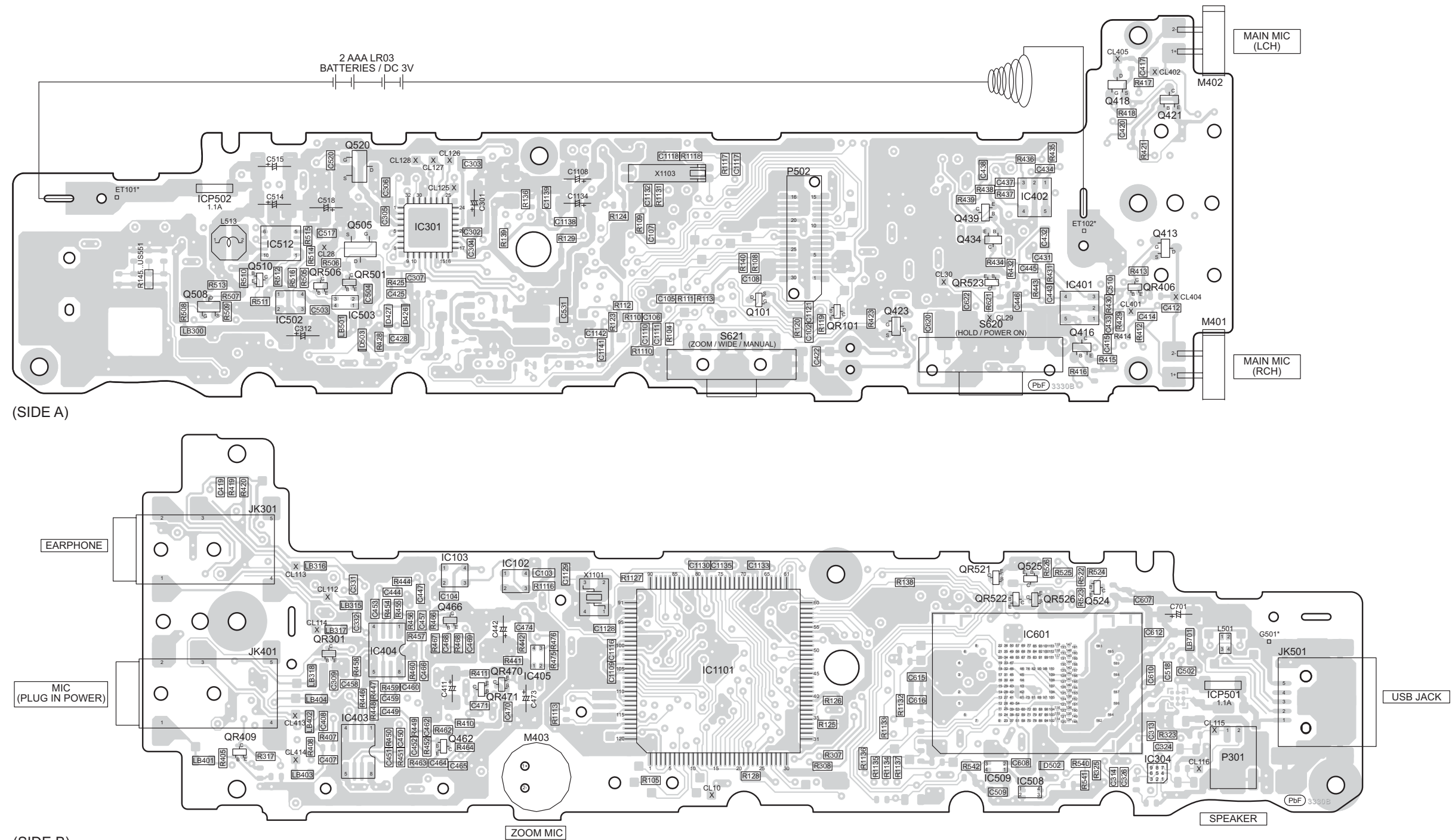


TO MAIN CIRCUIT (P502) IN SCHEMATIC DIAGRAM - 1

RR-US551E/EE/PP LCD CIRCUIT

16.1. MAIN P.C.B.

A MAIN P.C.B. (REP4604C)



NOTE: " * " REF IS FOR INDICATION ONLY

NOTE: AFTER IC601 IS REPLACED, ID DATA SHOULD BE WRITTEN IN THE IC.
PLEASE CONTACT TO NEAREST SERVICE COMPANY OR CS CENTER.

RR-US551PP/E/EE
MAIN P.C.B.

17 Terminal Function of IC's

17.1. IC1101 (C1AB00003279) MICRO PROCESSOR IC

Pin No.	Mark	I/O	Function
1	TEST3	-	TEST TERMINAL 3
2	TEST4	-	TEST TERMINAL 4
3	TEST5	-	TEST TERMINAL 5
4	TEST6	-	TEST TERMINAL 6
5	TCK	-	NO CONNECTION
6	RTCK	-	NO CONNECTION
7	NTRST	I	MICRO-P RESET
8	TDI	-	NO CONNECTION
9	TMS	-	NO CONNECTION
10	TDO	-	NO CONNECTION
11	NRES	I	RESET
12	PHI	I/O	AHB BUS CLOCK INPUT
13	EXTFIQ	I/O	ZOOM STEREO ON (ACTIVE: L)
14	SCK0/CL	I/O	SERIAL CLOCK INPUT/OUTPUT
15	SDO0/DA	I	SERIAL DATA INPUT
16	SD10/ REC_LED_L	-	REC LED ON (ACTIVE: L)
17	SCK1/LCD_CL	I/O	LCD CLOCK
18	SDO1/LCD_DI	I/O	LCD DATA INPUT
19	SDI1/LCD_CE	I/O	LCD CHIP ENABLE
20	TXD1_ZOOM_O N_H	I/O	UART1 TRANSMISSION DATA (ZOOM ON)
21	RXD1/ST_ON_L	I/O	UART1 RECEIVED DATA (ZOOM ON)
22	RECSW2	I/O	MULTIPLE TIMER INPUT CAP- TURE 2
23	RECSW1	I/O	MULTIPLE TIMER INPUT CAP- TURE 1
24	VDD1	-	1.5V SUPPLY VOLTAGE
25	VDD2	-	3.3V SUPPLY VOLTAGE
26	VSS	-	GND
27	TXD0	-	UART0 TRANSMISSION DATA 0
28	RXD0	-	UART0 RECEIVING DATA 0
29	XFWE	-	NAND FLASH WRITE ENABLE
30	XFRE	-	NAND FLASH READ ENABLE
31	XALE	-	NAND FLASH ADDRESS LATCH ENABLE
32	XCLE	-	NAND FLASH COMMAND LATCH ENABLE
33	XFCE1	-	NAND FLASH CHIP ENABLE 1
34	XFCE0	-	NAND FLASH CHIP ENABLE 0
35	XFWP	I/O	NAND FLASH WRITE PROTECT
36	XFBSY	I	NAND FLASH BUSY STATUS
37	FD0	-	GND
38	FDI	-	GND
39	VDD2	-	3.3V SUPPLY VOLTAGE
40	VSS	-	GND
41	FD2	-	GND
42	FD3	-	GND
43	FD4	-	GND
44	FD5	-	GND
45	FD6	-	GND
46	FD7	-	GND
47	EXTINT0/REC_ H	I/O	RECORD DETECT
48	EXTINT1/ HOLD_L	I/O	HOLD POSITION DETECT
49	EXTINT2/DCIN_ DET	I/O	DC INPUT DETECT
50	EXTINT3/ EXTMIC_H	I/O	EXTERNAL MIC DETECT

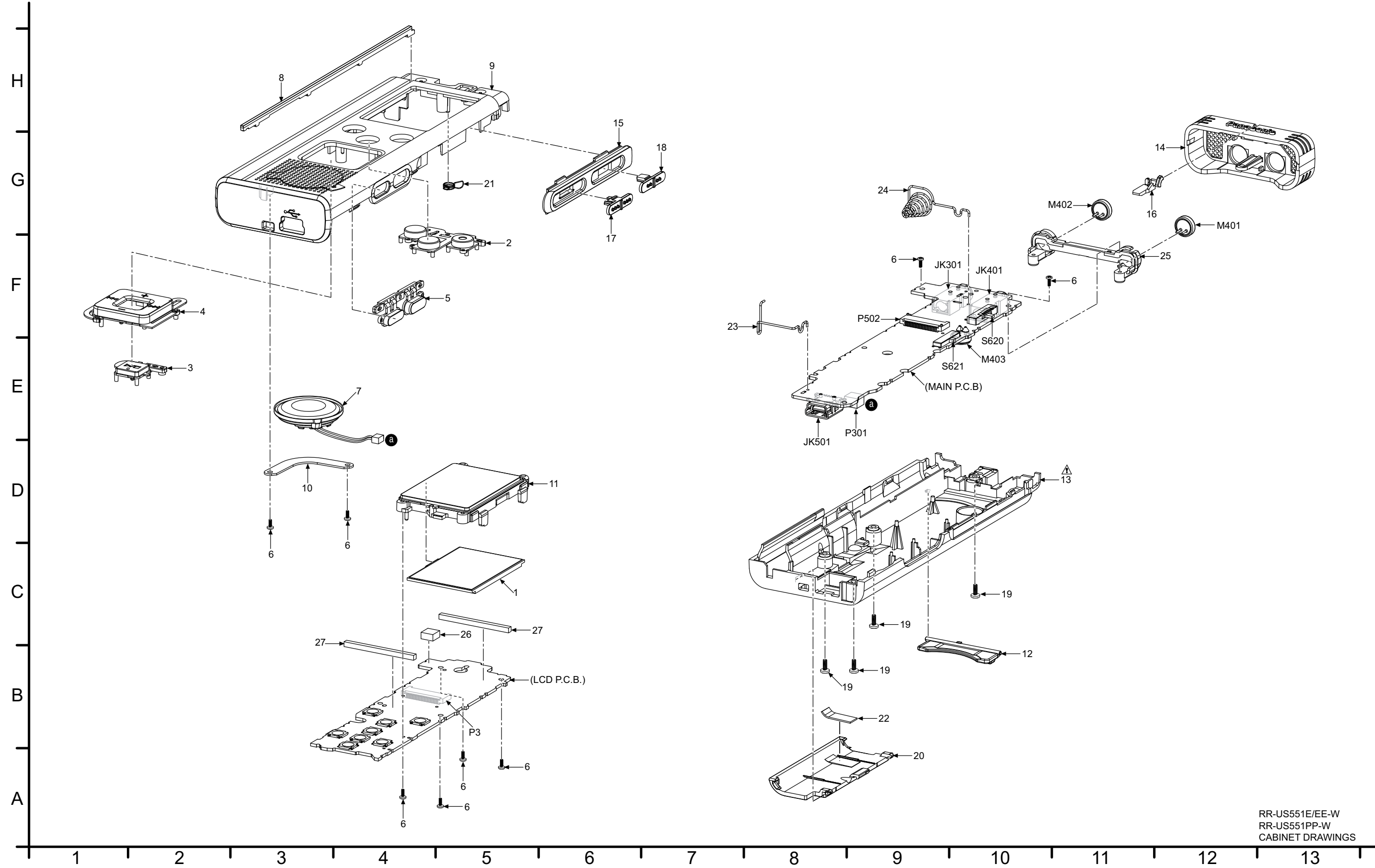
Pin No.	Mark	I/O	Function
51	EXTINT4/HPIN_ L	I/O	HEADPHONE DETECT
52	VDD1	-	1.5V SUPPLY VOLTAGE
53	VDD2	-	3.3V SUPPLY VOLTAGE
54	VSS	-	GND
55	DOUT/DAC- DATA	O	PCM O/P DATA
56	DIN	I	PCM I/P DATA
57	BCL/BCLK	I/O	PCM BIT CLOCK
58	LRCK	I/O	PCM LEFT/RIGHT CLOCK
59	MCLK	I/O	PCM MAIN CLOCK
60	SCL/INH	I/O	I2C SERIAL CLOCK
61	SDA/ MIC_SENSE_HI	I/O	MIC SENSE (ACTIVE:H)
62	TXD2/ USB_VBUS	I/O	UART2 TRANSMISSION DATA (USB V-BUS)
63	RXD2/ HP_MUTE_H	I/O	HEADPHONE MUTING (ACTIVE: H)
64	TEST1	-	GND
65	TEST2	-	GND
66	VDD1	-	1.5V SUPPLY VOLTAGE
67	SDWP	-	GND
68	SDCD	-	GND
69	SDCMD	I/O	SD COMMAND /MSBS
70	SDCLK	O	SD COMMAND / MS CLOCK
71	SDAT0	I/O	SD COMMAND/MS DATA
72	VSS	-	GND
73	VDD3	-	3.3V/1.8V SUPPLY VOLTAGE
74	SDAT1	I/O	SERIAL DATA INPUT 1
75	SDAT2	I/O	SERIAL DATA INPUT 2
76	SDAT3	I/O	SERIAL DATA INPUT 3
77	AVDDPLL1	-	ANALOG VOLTAGE SUPPLY (PLL1)
78	AVSSPLL1	-	ANALOG GND (PLL1)
79	VCNT1	O	VCO CONTROL (PLL1)
80	VDDXT	-	OSCILLATOR AMP 15V SUPPLY VOLTAGE
81	VSSXT	-	OSCILLATOR AMP GND (FOR USB PHY)
82	XIN1	I	OSCILLATOR AMP INPUT (FOR USB PHY)
83	XOUT1	I/O	OSCILLATOR AMP OUTPUT (FOR USB PHY)
84	VDDRTC	-	RTC VOLTAGE SUPPLY
85	VSSRTC	-	GND (FOR RTC)
86	XOUT32K	O	32.768KHz OSCILLATOR O/P (FOR RTC)
87	XIN32K	I	32.768KHz OSCILLATOR I/P (FOR RTC)
88	VDET	I	VOLTAGE MONITORING/COMPAR- ATOR I/P
89	RTCINT	O	RTC INTERRUPT SIGNAL O/P
90	BACKUPB	I	RTC OPERATION MODE
91	AVDDPHY1	-	1.5V SUPPLY VOLTAGE (FOR USB PHY)
92	AVSSPHY1	-	ANALOG GND (FOR USB PHY)
93	AVSSPHY2	-	ANALOG GND (FOR USB PHY)
94	RREF	-	REFERENCE RESISTOR (FOR USB PHY)
95	AVSSPHY2	-	ANALOG GND (FOR USB PHY)
96	AVDDPHY2	-	3.3V ANALOG VOLTAGE (FOR USB PHY)
97	AVDDPHY2	-	3.3V ANALOG VOLTAGE (FOR USB PHY)

Pin No.	Mark	I/O	Function
98	AVSSPHY2	-	ANALOG GND (FOR USB PHY)
99	AVSSPHY2	-	ANALOG GND (FOR USB PHY)
100	AVSSPHY2	-	ANALOG GND (FOR USB PHY)
101	AVDDPHY2	-	3.3V ANALOG VOLTAGE (FOR USB PHY)
102	DP	I/O	USB D+
103	DM	I/O	USB D-
104	AVSSPHY2	-	ANALOG GND (PHY2)
105	AVDDPHY2	-	3.3V ANALOG SUPPLY VOLTAGE (FOR USB PHY)
106	AVDDADC	-	ANALOG SUPPLY VOLTAGE (FOR ADC)
107	AN0/KEY1	I	ADC ANALOG INPUT CH0
108	AN1/KEY2	I	ADC ANALOG INPUT CH1
109	AN2/VBATT	I	ADC ANALOG INPUT CH2
110	AN3/ MODEL_SW	I	ADC ANALOG INPUT CH3
111	AVSSADC	-	ADC ANALOG GND
112	VSS	-	GND
113	XIN2	I	16.9344MHz OSCILLATOR INPUT
114	XOUT2	O	16.9344MHz OSCILLATOR OUTPUT
115	VDD1	-	1.5V SUPPLY VOLTAGE
116	AVDDPLL2	-	ANALOG SUPPLY VOLTAGE (PLL2)
117	AVSSPLL2	-	ANALOG GND (PLL2)
118	VCNT2	O	VCO CONTROL (PLL2)
119	VDD2	-	3.3V SUPPLY VOLTAGE
120	VSS	-	GND

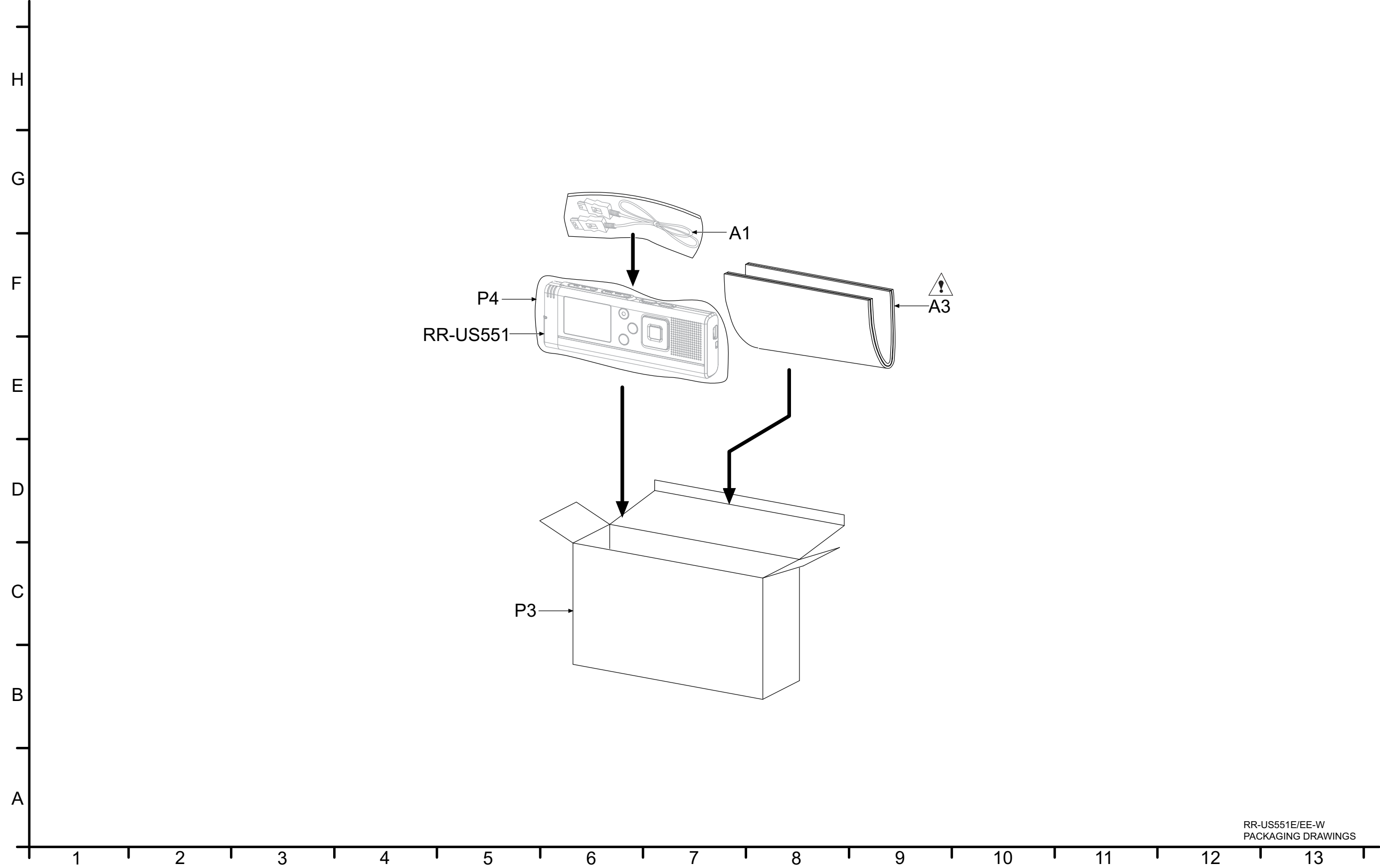
18 Exploded View and Replacement Parts List

18.1. Exploded View and Mechanical Replacement Parts List

18.1.1. Cabinet Parts Location

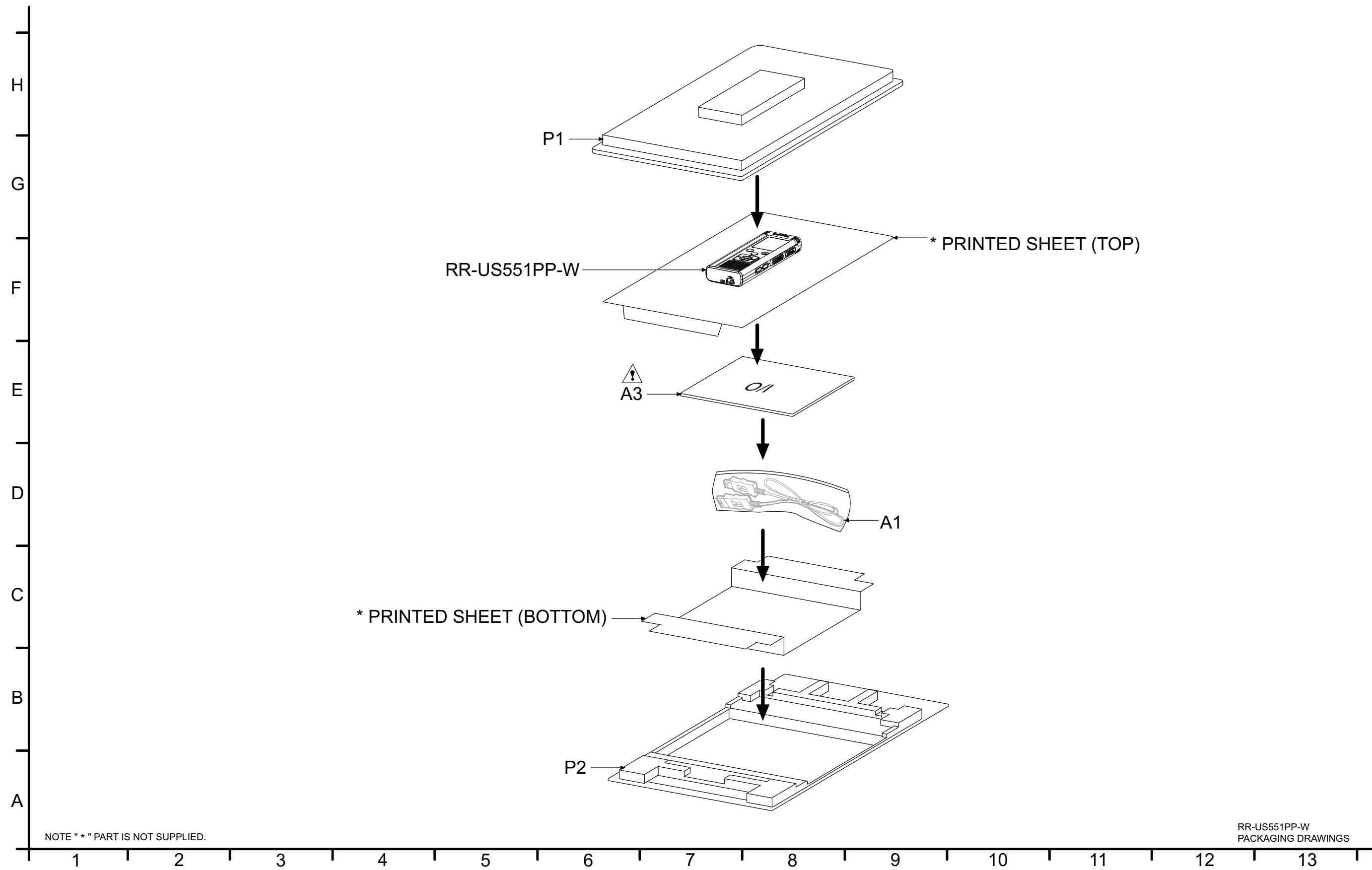


18.1.2. (RR-US551E/EE-W) Packaging



RR-US551E/EE-W
PACKAGING DRAWINGS

18.1.3. (RR-US551PP-W) Packaging



18.1.4. Mechanical Replacement Parts List

Important Safety Notice

Components identified by  mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

RTL (Retention Time Limited)

Note: The marking (RTL) indicates that the Retention Time is Limited for this item.

After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

Note:

- When replacing any of these components, be sure to use only manufacturer's specified parts shown in the replacement part list.
- The parenthesized indications on the Remarks column specify the destination & product color (Refer to the cover page for the information).
- Parts without these indications shall be used for all areas.
- This product uses a laser diode. Refer to "Precaution of Laser Diode".
- All parts mentioned are supplied by PAVCSG unless indicated likewise.
- Parts mentioned [SPG] in the Remarks column are supplied by PAVC-CSG.
- Reference for O/I book languages are as follows:

Ar:	Arabic	Du:	Dutch	It:	Italian	Sp:	Spanish
Cf:	Canadian French	En:	English	Ko:	Korean	Sw:	Swedish
Cz:	Czech	Fr:	French	Po:	Polish	Co:	Traditional Chinese
Da:	Danish	Ge:	German	Ru:	Russian	Cn:	Simplified Chinese
Pe:	Persian	Ur:	Ukraine	Pr:	Portuguese		

Safety	Ref. No.	Part No.	Part Name & Description	QTY	Remarks
			CABINET AND CHAS-SIS		
	1	L5AYBY00006	LCD DISPLAY	1	
	2	RGU2619B-S	REC BUTTON	1	
	3	RGU2620F-S	PLAY BUTTON	1	
	4	RGU2621D-S	UP DOWN BUTTON	1	
	5	RGU2622A-H	MENU BUTTON	1	E/EE
	5	RGU2622B-W	MENU BUTTON	1	PP
	6	RHE5162ZB	SCREW	8	
	7	L0AA02A00100	SPEAKER UNIT	1	
	8	RGK2155-S	FRONT ORNAMENT	1	
	9	RFKNUS551PPW	FRONT CABINET ASS'Y	1	
	10	RMQ1592	SPEAKER PLATE	1	
	11	RYQ0696C-Q	LCD HOLDER UNIT	1	
	12	RGQ0514B-W	STAND	1	
	13	RKS0466H-W	REAR CABINET	1	E/EE
	13	RKS0466G-W	REAR CABINET	1	PP
	14	RGK2153D-S	MIC ORNAMENT (A)	1	
	15	RGK2156-S2	SIDE ORNAMENT	1	
	16	RGQ0513-Q	LED TIP	1	
	17	RGV0373-H1	MODE KNOB	1	
	18	RGV0374-H2	HOLD KNOB	1	
	19	RHQ0051-K1	SCREW	4	
	20	RKK0199B-W1	BATTERY COVER	1	
	21	RMB0900	EARTH SPRING	1	
	22	RMZ1039	BATTERY SPACER	1	
	23	RJC40032	BATTERY TERMINAL +	1	
	24	RJC80033	BATTERY TERMINAL -	1	
	25	RMN0919	MIC HOLDER	1	
	26	RMG0774-K	CONDUCTIVE RUBBER	1	

Safety	Ref. No.	Part No.	Part Name & Description	QTY	Remarks
	27	RMG0773-W	ZEBRA CONNECTOR	2	
			PACKING MATERIALS		
	P1	RPN2165	CLAM-SHELL (COVER)	1	PP
	P2	RPN2166	CLAM-SHELL (BOT-TOM)	1	PP
	P3	RPK2867-1	INNER CARTON	1	E/EE
	P4	RPF0465-J	MIRAMAT BAG	1	E/EE
			ACCESSORIES		
	A1	K2KZ4CB00012	USB CABLE	1	
	A3	VQT2M17	O/I (En/Cf)	1	PP
	A3	VQT2M18	O/I BOOK (En)	1	E
	A3	VQT2M19	O/I BOOK (Ge/It/Fr/Du/Sp/Cn)	1	E
	A3	VQT2Q61	O/I BOOK (Sw/Da/Cz/Po/Pr/Ar)	1	E
	A3	VQT2Q63	O/I BOOK (Ru/Ur)	1	EE

18.2. Electrical Replacement Parts List

Important Safety Notice

Components identified by  mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

RTL (Retention Time Limited)

Note: The marking (RTL) indicates that the Retention Time is Limited for this item.

After the discontinuation of this assembly in production, the item will continue to be available for a specific period of time. The retention period of availability is dependant on the type of assembly, and in accordance with the laws governing part and product retention. After the end of this period, the assembly will no longer be available.

Note:

- When replacing any of these components, be sure to use only manufacturer's specified parts shown in the replacement part list.
- The parenthesized indications on the Remarks column specify the destination & product color (Refer to the cover page for the information).
- Parts without these indications shall be used for all areas.
- This product uses a laser diode. Refer to "Precaution of Laser Diode".
- Capacitor value are in microfarads (uF) unless specified otherwise, P=Pico-farads (pF), F=Farads.
- Resistance values are in ohms, unless specified otherwise, 1K=1000 (OHM).
- All parts mentioned are supplied by PAVCSG unless indicated likewise.
- Parts mentioned [SPG] in the Remarks column are supplied by PAVC-CSG.

Safety	Ref. No.	Part No.	Part Name & Description	QTY	Remarks
			PRINTED CIRCUIT BOARDS		
	PCB1	REP4478B	LCD P.C.B.	1	(RTL)
	PCB2	REP4604C	MAIN P.C.B.	1	(RTL)
			INTEGRATED CIRCUITS		
	IC102	C0EBB0000201	IC	1	
	IC103	C0EBE0000599	IC	1	
	IC105	C0DBGYY00990	IC	1	
	IC106	C0EBA0000046	IC	1	
	IC201	C0HBA0000251	IC	1	
	IC301	C1AB00002900	IC	1	
	IC304	C1AB00003292	IC	1	
	IC401	C0ABAB000112	IC	1	
	IC402	C0ABAB000112	IC	1	
	IC403	C0ABHA000078	IC	1	
	IC404	C0ABHA000078	IC	1	
	IC405	C0DBGYY00463	IC	1	
	IC502	C0EBF0000475	IC	1	
	IC503	C0DBGYY00464	IC	1	
	IC508	C0DBGYY00497	IC	1	
	IC509	C0DBGYY00462	IC	1	
	IC512	C0DBAYY00754	IC	1	
	IC601	C3FBWY000017	IC	1	
	IC1101	C1AB00003279	IC	1	
			TRANSISTORS		
	Q101	B1CFFB000001	TRANSISTOR	1	
	Q413	B1CFHC000003	TRANSISTOR	1	
	Q416	B1ABMD000012	TRANSISTOR	1	
	Q418	B1CFHC000003	TRANSISTOR	1	
	Q421	B1ABMD000012	TRANSISTOR	1	

Safety	Ref. No.	Part No.	Part Name & Description	QTY	Remarks
	Q423	B1CFHC000003	TRANSISTOR	1	
	Q434	B1CFFB000001	TRANSISTOR	1	
	Q439	B1CFFB000001	TRANSISTOR	1	
	Q462	B1ABCF000226	TRANSISTOR	1	
	Q466	B1ABCF000226	TRANSISTOR	1	
	Q505	B1DHCC000034	TRANSISTOR	1	
	Q508	B1CFFB000001	TRANSISTOR	1	
	Q510	B1ADCF000166	TRANSISTOR	1	
	Q520	B1DHCC000034	TRANSISTOR	1	
	Q524	B1ADCF000166	TRANSISTOR	1	
	Q525	B1ABCF000226	TRANSISTOR	1	
	QR101	B1GDCFJN0023	TRANSISTOR	1	
	QR301	B1GBCFJN0037	TRANSISTOR	1	
	QR406	B1GBCFNN0042	TRANSISTOR	1	
	QR409	B1GDCFJN0023	TRANSISTOR	1	
	QR470	B1GDCFJA0025	TRANSISTOR	1	
	QR471	B1GDCFJA0025	TRANSISTOR	1	
	QR501	B1GBCFNN0042	TRANSISTOR	1	
	QR506	B1GBCFNN0042	TRANSISTOR	1	
	QR521	B1GBCFNN0042	TRANSISTOR	1	
	QR522	B1GBCFNN0042	TRANSISTOR	1	
	QR523	B1GDCFJN0023	TRANSISTOR	1	
	QR526	B1GBCFNN0042	TRANSISTOR	1	
			DIODES		
	D126	B0ACCJ000027	DIODE	1	
	D201	B3AAB0000037	DIODE	1	
	D426	B0JCDD000019	DIODE	1	
	D427	B0JCDD000019	DIODE	1	
	D502	B0JCDD000019	DIODE	1	
	D503	B0ACCJ000027	DIODE	1	
			INDUCTORS		
	LB300	J0JGC0000059	INDUCTOR	1	
	LB315	J0JAC0000055	INDUCTOR	1	
	LB316	J0JAC0000055	INDUCTOR	1	

Safety	Ref. No.	Part No.	Part Name & Description	QTY	Remarks
	LB317	J0JAC0000055	INDUCTOR	1	
	LB318	J0JAC0000055	INDUCTOR	1	
	LB401	J0JAC0000055	INDUCTOR	1	
	LB402	J0JAC0000055	INDUCTOR	1	
	LB403	J0JAC0000055	INDUCTOR	1	
	LB404	J0JAC0000055	INDUCTOR	1	
	LB501	J0JGC0000059	INDUCTOR	1	
	LB701	J0JGC0000059	INDUCTOR	1	
			SWITCHES		
	S601	K0H1BA000436	SW PLAY/STOP/ENTER	1	
	S602	K0H1BA000436	SW FAST FORWARD	1	
	S603	K0H1BA000436	SW FAST BACKWARD	1	
	S604	K0H1BA000436	SW - VOLUME	1	
	S605	K0H1BA000436	SW FOLDER/SPEED	1	
	S606	K0H1BA000436	SW STOP	1	
	S607	K0H1BA000436	SW +VOLUME	1	
	S608	K0H1BA000436	SW REC/PAUSE	1	
	S609	EVQP7L01K	SW MENU/-REPEAT	1	
	S610	EVQP7L01K	SW ERASE	1	
	S620	K0D113B00087	SW HOLD/POWER ON	1	
	S621	K0D113B00029	SW ZOOM/WIDE/MAN-UAL	1	
			CONNECTORS		
	P3	K1KY30AA0651	30P CONNECTOR	1	
	P301	K1KA02BA0014	2P CONNECTOR	1	
	P502	K1KY30AA0652	30P CONNECTOR	1	
			COILS AND INDUC-TORS		
	L501	J0JBD0000045	INDUCTOR	1	
	L513	G1C6R8ZA0222	INDUCTOR	1	
			RESETTABLE FUSES		
⚠	ICP501	D4FB1R100015	RESETTABLE FUSE	1	
⚠	ICP502	D4FB1R100015	RESETTABLE FUSE	1	
			OSCILLATORS		
	X1101	H0J120500050	CRYSTAL OSCILLATOR	1	
	X1103	H0J327200085	CRYSTAL OSCILLATOR	1	
			JACKS		
	JK301	K2HC104E0014	JK HEADPHONE	1	
	JK401	K2HC1YYE0006	JK HEADPHONE	1	
	JK501	K2HZ105E0007	JK USB	1	
			MICROPHONES		
	M401	L0CBAB000124	MICROPHONE	1	
	M402	L0CBAB000124	MICROPHONE	1	
	M403	L0CBAB000124	MICROPHONE	1	
			RESISTORS		
	R104	ERJ2GE0R00X	0 1/16W	1	
	R105	D0GA330JA023	33 1/16W	1	
	R108	D0GA221JA023	220 1/16W	1	
	R109	D0GA221JA023	220 1/16W	1	
	R110	D0GA221JA023	220 1/16W	1	
	R111	D0GA221JA023	220 1/16W	1	
	R112	ERJ2RHD473X	47K 1/16W	1	
	R113	ERJ2RHD473X	47K 1/16W	1	
	R119	ERJ2GEJ334X	330K 1/16W	1	
	R120	D0GA104JA023	100K 1/16W	1	
	R122	D0GA103JA023	10K 1/16W	1	
	R123	ERJ2GEJ334X	330K 1/16W	1	

Safety	Ref. No.	Part No.	Part Name & Description	QTY	Remarks
	R124	ERJ2GEJ334X	330K 1/16W	1	
	R125	ERJ2GEJ334X	330K 1/16W	1	
	R126	ERJ2GEJ334X	330K 1/16W	1	
	R128	ERJ2GEJ334X	330K 1/16W	1	
	R129	ERJ2GEJ334X	330K 1/16W	1	
	R136	ERJ2GEJ334X	330K 1/16W	1	
	R138	ERJ2GEJ561X	560 1/16W	1	
	R139	ERJ2GEJ334X	330K 1/16W	1	
	R140	ERJ2GEJ224X	220K 1/16W	1	
	R145	ERJ2GEJ224X	220K 1/16W	1	
	R201	D0GA104JA023	100K 1/16W	1	
	R202	D0GA393JA023	39K 1/16W	1	
	R203	D0GA104JA023	100K 1/16W	1	
	R206	ERJ2GE0R00X	0 1/16W	1	
	R207	D0GA222JA023	2.2K 1/16W	1	
	R307	ERJ2GEJ390X	39 1/16W	1	
	R308	ERJ2GEJ390X	39 1/16W	1	
	R312	ERJ2GEJ334X	330K 1/16W	1	
	R317	D0GA103JA023	10K 1/16W	1	
	R319	ERJ2GE0R00X	0 1/16W	1	
	R323	D0GA822JA023	8.2K 1/16W	1	
	R325	D0GA822JA023	8.2K 1/16W	1	
	R405	D0GA473JA023	47K 1/16W	1	
	R407	D0GA221JA023	220 1/16W	1	
	R408	D0GA221JA023	220 1/16W	1	
	R410	ERJ2GEJ474X	470K 1/16W	1	
	R411	D0GA101JA023	100 1/16W	1	
	R412	D0GA222JA023	2.2K 1/16W	1	
	R413	ERJ2GEJ475X	4.7M 1/16W	1	
	R414	D0GA103JA023	10K 1/16W	1	
	R415	D0GA104JA023	100K 1/16W	1	
	R416	ERJ2GEJ223X	22K 1/16W	1	
	R417	D0GA222JA023	2.2K 1/16W	1	
	R418	ERJ2GEJ475X	4.7M 1/16W	1	
	R419	D0GA103JA023	10K 1/16W	1	
	R420	D0GA104JA023	100K 1/16W	1	
	R421	ERJ2GEJ223X	22K 1/16W	1	
	R423	ERJ2GEJ475X	4.7M 1/16W	1	
	R425	ERJ2GE0R00X	0 1/16W	1	
	R428	ERJ2GEJ475X	4.7M 1/16W	1	
	R429	D0GA104JA023	100K 1/16W	1	
	R430	D0GA104JA023	100K 1/16W	1	
	R431	ERJ2GEJ683X	68K 1/16W	1	
	R432	D0GA222JA023	2.2K 1/16W	1	
	R434	D0GA102JA023	1K 1/16W	1	
	R435	D0GA104JA023	100K 1/16W	1	
	R436	D0GA104JA023	100K 1/16W	1	
	R437	ERJ2GEJ683X	68K 1/16W	1	
	R438	D0GA222JA023	2.2K 1/16W	1	
	R439	D0GA102JA023	1K 1/16W	1	
	R441	D0GA103JA023	10K 1/16W	1	
	R442	D0GA103JA023	10K 1/16W	1	
	R443	D0GA102JA023	1K 1/16W	1	
	R444	D0GA102JA023	1K 1/16W	1	
	R446	ERJ2GEJ223X	22K 1/16W	1	
	R447	D0GA273JA023	27K 1/16W	1	
	R448	ERJ2GEJ184X	180K 1/16W	1	
	R449	D0GA103JA023	10K 1/16W	1	
	R450	ERJ2GEJ223X	22K 1/16W	1	
	R451	ERJ2GEJ154X	150K 1/16W	1	
	R452	D0GA103JA023	10K 1/16W	1	
	R454	ERJ2GEJ223X	22K 1/16W	1	
	R455	D0GA273JA023	27K 1/16W	1	
	R456	ERJ2GEJ184X	180K 1/16W	1	
	R457	D0GA103JA023	10K 1/16W	1	
	R458	ERJ2GEJ223X	22K 1/16W	1	
	R459	ERJ2GEJ154X	150K 1/16W	1	
	R460	D0GA103JA023	10K 1/16W	1	
	R462	ERJ2GEJ474X	470K 1/16W	1	
	R463	D0GA472JA023	4.7K 1/16W	1	
	R464	D0GA102JA023	1K 1/16W	1	
	R466	ERJ2GEJ474X	470K 1/16W	1	
	R467	D0GA472JA023	4.7K 1/16W	1	

Safety	Ref. No.	Part No.	Part Name & Description	QTY	Remarks
	R468	D0GA102JA023	1K 1/16W	1	
	R475	ERJ2GEJ474X	470K 1/16W	1	
	R476	ERJ2GEJ474X	470K 1/16W	1	
	R505	ERJ2GEJ474X	470K 1/16W	1	
	R506	ERJ2GEJ474X	470K 1/16W	1	
	R507	ERJ2RKD224X	220K 1/16W	1	
	R508	D0GA104JA023	100K 1/16W	1	
	R509	ERJ2RHD104X	100K 1/16W	1	
	R510	D0GA105JA023	1M 1/16W	1	
	R511	ERJ2GEJ225X	2.2M 1/16W	1	
	R512	ERJ2GEJ564X	560K 1/16W	1	
	R513	D0GA104JA023	100K 1/16W	1	
	R514	ERJ2RHD273X	27K 1/16W	1	
	R515	ERJ2RKD184X	180K 1/16W	1	
	R516	ERJ2RKD824X	820K 1/16W	1	
	R518	ERJ2GEJ474X	470K 1/16W	1	
	R522	ERJ2GEJ474X	470K 1/16W	1	
	R523	ERJ2GEJ474X	470K 1/16W	1	
	R524	ERJ2GEJ474X	470K 1/16W	1	
	R525	ERJ2GEJ474X	470K 1/16W	1	
	R526	D0GA105JA023	1M 1/16W	1	
	R540	D0GA473JA023	47K 1/16W	1	
	R541	ERJ2GEJ474X	470K 1/16W	1	
	R542	ERJ2GEJ474X	470K 1/16W	1	
	R602	ERJ2RHD562X	5.6K 1/16W	1	
	R603	ERJ2RHD682X	6.8K 1/16W	1	
	R604	ERJ2RHD103X	10K 1/16W	1	
	R605	ERJ2RHD153X	15K 1/16W	1	
	R606	ERJ2RHD273X	27K 1/16W	1	
	R608	ERJ2RHD103X	10K 1/16W	1	
	R609	ERJ2RHD153X	15K 1/16W	1	
	R610	ERJ2RHD273X	27K 1/16W	1	
	R611	D0GB221JA007	220 1/16W	1	
	R612	ERJ2RHD682X	6.8K 1/16W	1	
	R613	ERJ2RHD562X	5.6K 1/16W	1	
	R621	D0GA103JA023	10K 1/16W	1	
	R1110	D0GA101JA023	100 1/16W	1	
	R1113	ERJ2GE0R00X	0 1/16W	1	
	R1116	ERJ2RHD681X	680 1/16W	1	
	R1117	ERJ2GEJ106X	10M 1/16W	1	
	R1118	ERJ2GEJ334X	330K 1/16W	1	
	R1127	D0GA105JA023	1M 1/16W	1	
	R1131	D0GA101JA023	100 1/16W	1	
	R1132	D0GA101JA023	100 1/16W	1	
	R1133	D0GA101JA023	100 1/16W	1	
	R1134	D0GA101JA023	100 1/16W	1	
	R1135	D0GA101JA023	100 1/16W	1	
	R1136	D0GA101JA023	100 1/16W	1	
	R1137	D0GA101JA023	100 1/16W	1	
			CAPACITORS		
	C102	F161A473A032	0.047uF 10V	1	
	C103	F160J105A022	1uF 6.3V	1	
	C104	F160J105A022	1uF 6.3V	1	
	C105	F161C103A048	0.01uF 16V	1	
	C106	F161C103A048	0.01uF 16V	1	
	C107	F161C103A048	0.01uF 16V	1	
	C108	F161C103A048	0.01uF 16V	1	
	C121	F160J105A022	1uF 6.3V	1	
	C124	F360J107A017	100uF 6.3V	1	
	C125	F360J107A017	100uF 6.3V	1	
	C126	F160J224A001	0.22uF 6.3V	1	
	C202	F161H681A571	680pF 50V	1	
	C203	F161A473A032	0.047uF 10V	1	
	C204	F161A473A032	0.047uF 10V	1	
	C205	F161A473A032	0.047uF 10V	1	
	C208	F161C103A048	0.01uF 16V	1	
	C301	F3F0J226A032	22uF 6.3V	1	
	C302	F160J105A022	1uF 6.3V	1	
	C303	F1J0J106A004	10uF 6.3V	1	
	C304	F160J105A022	1uF 6.3V	1	
	C305	F160J105A022	1uF 6.3V	1	

Safety	Ref. No.	Part No.	Part Name & Description	QTY	Remarks
	C306	F160J105A022	1uF 6.3V	1	
	C307	F160J105A022	1uF 6.3V	1	
	C309	F161H221A541	220pF 50V	1	
	C312	F360J107A017	100uF 6.3V	1	
	C313	F161C223A081	0.022uF 16V	1	
	C314	F161C223A081	0.022uF 16V	1	
	C324	F160J105A022	1uF 6.3V	1	
	C326	F160J105A022	1uF 6.3V	1	
	C331	F161E102A086	1000pF 25V	1	
	C332	F161E102A086	1000pF 25V	1	
	C407	F161E102A086	1000pF 25V	1	
	C408	F161E102A086	1000pF 25V	1	
	C411	F3F0J226A032	22uF 6.3V	1	
	C412	F161H222A416	2200pF 50V	1	
	C414	F161A473A032	0.047uF 10V	1	
	C415	F161A104A012	0.1uF 10V	1	
	C417	F161H222A416	2200pF 50V	1	
	C419	F161A473A032	0.047uF 10V	1	
	C420	F161A104A012	0.1uF 10V	1	
	C422	F161H222A416	2200pF 50V	1	
	C425	F161A104A012	0.1uF 10V	1	
	C428	F1H0J225A005	2.2uF 6.3V	1	
	C431	F161H221A541	220pF 50V	1	
	C432	F1H0J225A005	2.2uF 6.3V	1	
	C433	F161H221A541	220pF 50V	1	
	C434	F161H221A541	220pF 50V	1	
	C437	F161H221A541	220pF 50V	1	
	C438	F1H0J225A005	2.2uF 6.3V	1	
	C442	F3F0J226A032	22uF 6.3V	1	
	C443	F161A473A032	0.047uF 10V	1	
	C444	F161A473A032	0.047uF 10V	1	
	C445	F161A333A032	0.033uF 10V	1	
	C446	F161C103A048	0.01uF 16V	1	
	C447	F161C103A048	0.01uF 16V	1	
	C449	F160J683A001	0.068uF 6.3V	1	
	C450	F160J683A001	0.068uF 6.3V	1	
	C451	F161H221A541	220pF 50V	1	
	C452	F161A104A012	0.1uF 10V	1	
	C453	F161A333A032	0.033uF 10V	1	
	C457	F160J683A001	0.068uF 6.3V	1	
	C458	F160J683A001	0.068uF 6.3V	1	
	C459	F161H221A541	220pF 50V	1	
	C460	F161A104A012	0.1uF 10V	1	
	C462	F161C682A081	6800pF 16V	1	
	C464	F161C223A081	0.022uF 16V	1	
	C465	F161C103A048	0.01uF 16V	1	
	C466	F161C682A081	6800pF 16V	1	
	C468	F161C223A081	0.022uF 16V	1	
	C469	F161C103A048	0.01uF 16V	1	
	C470	F160J105A022	1uF 6.3V	1	
	C471	F160J105A022	1uF 6.3V	1	
	C473	F3F0J226A032	22uF 6.3V	1	
	C474	F160J105A022	1uF 6.3V	1	
	C502	F160J105A022	1uF 6.3V	1	
	C503	F160J105A022	1uF 6.3V	1	
	C504	F1H0J225A005	2.2uF 6.3V	1	
	C509	F1H1A1050002	1uF 10V	1	
	C510	F161H221A541	220pF 50V	1	
	C514	F360J107A017	100uF 6.3V	1	
	C515	F360J107A017	100uF 6.3V	1	
	C517	F1H0J4750004	4.7uF 6.3V	1	
	C518	F360J107A017	100uF 6.3V	1	
	C520	F161A473A032	0.047uF 10V	1	
	C531	F1J0J106A004	10uF 6.3V	1	
	C607	F161A104A012	0.1uF 10V	1	
	C608	F161A104A012	0.1uF 10V	1	
	C610	F161A104A012	0.1uF 10V	1	
	C612	F161A104A012	0.1uF 10V	1	
	C615	F160J105A022	1uF 6.3V	1	
	C616	F161A104A012	0.1uF 10V	1	
	C620	F161C103A048	0.01uF 16V	1	
	C622	F161E102A086	1000pF 25V	1	
	C701	F3F0J226A032	22uF 6.3V	1	

Safety	Ref. No.	Part No.	Part Name & Description	QTY	Remarks
	C1108	F3F0J226A032	22uF 6.3V	1	
	C1109	F1G1A104A012	0.1uF 10V	1	
	C1110	F1G0J105A022	1uF 6.3V	1	
	C1111	F1G1C103A048	0.01uF 16V	1	
	C1116	F1G1A104A012	0.1uF 10V	1	
	C1117	F1G1H120A565	12pF 50V	1	
	C1118	F1G1H120A565	12pF 50V	1	
	C1121	F1G0J105A022	1uF 6.3V	1	
	C1128	F1G1H150A565	15pF 50V	1	
	C1129	F1G1H180A565	18pF 50V	1	
	C1130	F1G1A104A012	0.1uF 10V	1	
	C1132	F1G1A104A012	0.1uF 10V	1	
	C1133	F1G1A104A012	0.1uF 10V	1	
	C1134	F3F0J226A032	22uF 6.3V	1	
	C1135	F1G1A104A012	0.1uF 10V	1	
	C1138	F1G1A104A012	0.1uF 10V	1	
	C1139	F1G1A104A012	0.1uF 10V	1	
	C1141	F1G1A104A012	0.1uF 10V	1	
	C1142	F1G1A104A012	0.1uF 10V	1	

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